# The Development of the Minaret

# in Iran under the Saljūqs

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Abstract.

This thesis is essentially an art historical analysis on one particular Islamic architectural form, the minaret. Having explained the historical situation, before embarking on a detailed examination of the Iranian minaret I have felt it necessary to ascertain the exact function of the minaret, and then to detail its development in the western Islamic lands so that the difference between the Iranian minarets and those of the west may be more readily appreciated. I have then examined the various remains in Iran prior to the eleventh century, and have then described the various forms which the minaret took in Iran in the elventh and twelfth centuries. I have then investigated the origins of the Iranian minaret form, and also why it spread so widely and so swiftly. The incursion of the Central Asian Turks into Iran is shown to have had a profound effect on a number of architectural forms and decorations but I have basically restricted myself to discussing the effects on the minaret forms. The title of the thesis concerns the development under the Saljūqs, and I therefore considered it important to define exactly what was meant by the term Saljūq, in particular in the context in which I have been using it. This led me to describe the end of the Saljūq period and its successor period in some detail. As a result of these various investigations, it might be argued that the Saljūq achievement was less than had hitherto been considered, which has led me to make a comparatively detailed description of the actual Saljūq achievement particularly with regard to the development of the minaret. In conclusion I have compiled a catalogue of all existing Iranian minarets of this period of which I have been made aware, either through literary or field research, and have illustrated the thesis with plans, drawings and photographs.

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Transliteration.

The system of transliteration used throughout the thesis is basically that of the Encyclopedia of Islam, with certain modifications.

1. No ligature, as in kh, etc., except to avoid confusion in compound words.

2. 'j' for 'dj'.

3. Titles and names have been set in Arabic transliteration, even when the Persian pronunciation is different.

4. Certain place names have been left in their most popular form.

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Contents:-

## Introduction.

Within the confines of modern Iran there are some 40 minarets or towers which survive from the eleventh and twelfth centuries. In form they represent a shape new to the Islamic world and totally different from that which prevailed in the western Islamic lands. The patterns and designs with which they were decorated were a development in technique both in idea and execution from those to the west, although many of these designs were subsequently translated into different media and utilised throughout the Islamic world. Architecturally this period may be characterised as the Age of Baked Brick, when that particular medium attained heights undreamed of before or since, and some of the finest expressions of brickwork design are to be found in these surviving minarets.

It is the intention of this thesis to examine these particular minarets and the various brick patterns which adorn them, and to place them in chronological order. At the same time an attempt will be made to discuss how, and if possible why they differ from similar towers and minarets in other parts of the Islamic world. With particular reference to the way in which the Iranian minarets differ from those in the more westerly Islamic lands, I have felt it necessary to describe in detail the complete development of the minaret so that the importance of the emergence of this new style might be the more apparent. Only against such a complete background can the difference in both form and technique be appreciated.

Although, as I shall demonstrate, these new styles appeared during

a period of domination by the Turkic peoples of Central Asia, it is significant that they should have appeared in the area of greater Iran.

Since the beginning of the ninth century when the Khalīfa Ma'mūn, himself the son of a Persian slave mother, attained the throne with the aid of Persian troops raised in Khurāsān (Lane-Poole 1925:123), Persian influence, which maintained him in power, was allowed to increase continually (Note 1). During the next 100 years a number of Persians were appointed to position s of command in greater Iran (Note 2), and, as a result of the seperatist and nationalistic tendencies of the period, were able to establish themselves as dynasts over various parts of the area, owing no more than nominal alleigance to the Khalifate in Baghdad. Two of these dynasties, the Ṭāhirids and the Sāmānids, owed the origins of their power directly to the Khalīfa al-Ma'mūn, while others, such as the Ṣaffārids, attained to power through being appointed by other provincial governors(Note 3).

Of these dynasties the Sāmānids were the most important for the purposes of this thesis, although their political power and influence was to be completely overshadowed by that of the Būyids. These latter, after transferring their alleigance from the Sāmānids, rose to power under the Ziyārids, a line of south Caspian princes (Lane-Poole 1925:139)(Note 4). However they soon outgrew their patrons and eventually ruled all southern Persia and Iraq, having the Khalīfa himself in subjugation. Their power was supreme, but was rendered all the more obnoxious to the majority of the Muslims because they were Shī'ites and held the Khalīfa, head of the Sunnī in so subject a situation that at the end of their reign, one of

their generals, al-Basāsīrī (Note 5), was able to actually have the Khutba read in the name of the Fāṭimid Khalīfa (Ibn al-Athīr, IX, s.a. 445-7). In the context of Persian nationalism it is extremely interesting that the Būyids invented a genealogy which traced them back to the Sasanians, to Bahram V (Busse 1973:57) (Note 6), as did many of the other South Caspian dynasts.

This revival of Persian national consciousness found a number of expressions during the tenth century, many of which, particularly those with a political slant, are set out in detail by Busse (1973; 47-69) who also indicates the significance behind many of the ceremonial insistencies of the Būyids (Note 7). He also mentions one important side effect of this, 'Aḍūd al-Dawla's preoccupation with building (Busse 1973:65-6)(Note 8), and the building activities of the Būyids are certainly of importance to this thesis, as will be indicated later.

An expression of this Persian national consciousness not mentioned by Busse but which must be regarded as highly symptomatic of the whole movement, was the increasing use of the Persian language as a literary vehicle, culminating in the composition of the Shāhnāma at the beginning of the eleventh century (Note 9). Interestingly enough this had a very mixed reception, symbolised by Maḥmūd of Ghaznī's initial rejection and then subsequent acceptance (Note 10), and whereas the Persians gloried in it, the Turks referred to the cult of long-dead heroes, not to be compared to the present glories of such a one as Sanjar (Note 11). This conflict between the Persians and the Turks, emphasised by such statements as that reported of the Ziyārid Mardāwīj who claimed to be a reincarnation

of Solomon, and who said that he ruled over his Turkish slaves as Solomon had done over the demons (Busse 1973:57), has in fact been seen by some as a continuation of the age-long conflict between Īrān and Tūrān, although the inhabitants of classical Tūrān were almost certainly not Turks (Note 12).

While this resurgent Persian nationalism must form the underlying main current of the period, and one which I feel did have an effect on the architecture, it was the appearance of the Central Asian Turks in the eastern Islamic world as rulers as opposed to slaves and mercenaries which caused the most significant changes, and perhaps provided the vehicle through which this Persian, anti-Arab feeling could find expression (Note 13).

The 'Abbāssid Khalīfas had originally obtained their office with help from Khurāsānian armies, and this eastern dependence increased with the creation of 'slave' armies formed of purchased Turks (Note 14). During the reign of Hārūn al-Rashīd, 170-93/786-809, there is the first notice of the appointment of a Turkish general (Muir 1963:479 n.1), which tendency was continued under al-Ma'mūn, and eventually led to the creation of Sāmarrā under al-Mu'taṣim, 218-27/833-42 (Note 15). The first Turkish dynasty as such was founded by Aḥmad ibn Ṭūlūn, son of a Turkish slave who had been sent to the Khalīfa al-Ma'mūn as a present by the Sāmānid ruler of Bukhara. This dynasty was followed after a brief interval by that of the Ikhshīdids, 323-58/935-69, a dynasty also Turkish in origin (Note 16). However, although witnessing to the importance of the Turks at this period, neither of these dynasties can be said to have

impressed a Turkish style upon the architecture of the area over which they ruled, and it is with the advent to power of the Turks in the more eastern Islamic lands that this thesis is concerned.

The first of these dynasties was that of the Ghaznavids, which, in turn, sprang from a delegation of power by the Sāmānid rulers to one of their Turkish generals (Note 17). A number of different influences can be distinguished in the structure of Ghaznavid society which can in turn be seen reflected in the architecture of the period; the Turkish-Central Asian, the Persian, and the Indian. At this point it will be sufficient simply to note them, but these various themes will be elaborated when the question of the origin of the Persian form of minaret is discussed. These three influences can be seen throughout the eleventh and twelfth centuries, varying in intensity during the period under discussion, but at all times distinguishable. Under the Saljūqs the balance tended to alter slightly, but, as I shall demonstrate, many of the forms had already been established in the preceding period prior to the arrival of the Saljūqs. This is in no way to denigrate the Saljūq achievement, but will show that they formed part of a continuously developing cycle, to which their contribution was of considerable importance but followed in an established tradition.

The Turkish Central Asian irruption into the lands of the eastern Khalifate was of considerable importance to the architecture of the region, with which this thesis is concerned, but at the same time also to a number of other facets of Islamic life in the region, one of which was that of religion. As has already been mentioned, the Būyids were Shī'ī, and not the least of the reasons for the great antagonism between the Saljūqs and the Būyids was the fact

that the Turks had been converted to the Sunni form of Islam, and as recent converts were extreme in their orthodoxy (Note18). This politico-religious conflict underlay much of the destruction and restructuring of the Būyid monuments during the Saljūq period, although many of the ideas current in the Būyid conception of kingship dating back to earlier Sasanian concepts, were taken over completely by their successors (Note 19). This alternate fascination and repulsion with Persian ideas and forms constitutes a peculiar theme running throughout the Saljūqs' relations with their Persian subjects, and can perhaps be seen reflected in the architectural synthesis achieved by Persian craftsmen working under Turkish direction.

Thus certain quite distinct themes can be isolated from the very complicated socio-political movements which form the background to the events of the eleventh and twelfth centuries; a resurgent Persian nationalism; the advent of the Turks as rulers in the eastern Islamic world; and an exacerbation of the political struggle between the native Iranian dynasties and the incoming Turks on a religious level. These all contributed towards the creation of a new architectural style, and specifically towards the form and style of the group of minarets with the analysis of which this thesis is concerned.

Introduction. Notes.

1. Al-Ma'mūn, 'Abū 'l-'Abbās 'Abd Allāh, was born in 170/786, the son of Hārūnal-Rashīd and a Persian slave Marājīl. After having his brother the Khalīfa al-Amīn assassinated, he ascended the throne in 198/813, but it was a further 6 years before he could enter Baghdad. His interest in persian things was further sti. mulated by his Wazīr al-Faḍl b. Saḥl, and he was therefore not popular with the Arabs. He died in 218/833. During his reign he supported the Mu'taẓilites and treated the 'Alīds with great consideration, and was also a great patron of learning.(Zettersteen,E.I.).

2. Ṭāhir Dhū-l-Yamīnayn, a General of al-Ma'mūn and descended from a Persian slave, was appointed Governor of Khurāsān in 205/820 by Ma'mūn where he and his dynasty became practically independent. Sāmān, the ancestor of the Sāmānids, was a Persian noble from Balkh, whose grandsons distinguished themselves in the service of al-Ma'mūn, and were given provincial governments, Nūḥ had Samarḳand; Aḥmad, Farghāna; Yaḥyā, Shāsh; and Ilyās, Herāt. Ya'ḳūb, the son of Layth the Ṣaffār (Coppersmith) rose to power through the court of the Governor of Sīstān whom he eventually succeeded some time before 255/868 (Lane-Poole 1925:128-131).

3. This reassertion of Persian power once more reflected the earlier division of empire between East and West, whereas the artifical creation of a centre at Damascus had cut across this division. The 'Abbāssid Khalifate thus became once more a recreation of the Sasanian empire while the western Islamic world took on the role of the Byzantine empire.

4. 'Alī and Ḥasan, the sons of Abū Shujā' Buwayh, first made their appearance in the army of Mākān b. Kākī, one of the three generals of the Sāmānids who struggled for supremacy in Ṭabaristān after the death of Ḥasan b. 'Alī al-Utrush, the Zaydite Imām. The other two generals were Asfār b. Shīrūyah and Mardāwīj b. Ziyār. Mardāwīj was victorious, and therefore the Būyid brothers joined his ranks on the death of Mākān. (Kabir 1964:2).

5. Al-Basāsīrī, Abu 'l-Ḥārith Arslān al-Muẓaffar, was originally a Turkish slave who became one of the great military leaders of the later Būyids. During the period of Saljūqid expansion into Iraq and Baghdad between 447/1055 and 452/1060, while the Saljūqid army was either in Baghdad or pursuing internal troubles in Iran, al-Basāsīrī, with help from the Fāṭimid Khalīfa al-Mustanṣir in Cairo, managed to evict the Saljūqid army and the Khalīfa al-Muḳtadī himself from Baghdad and had the khutba pronounced in the name of the Fāṭimid Khalīfa some 40 times before he was killed in battle by the returning Saljūqs in January 1060 (Canard, E.I.).

6. The choice of Bahram V as the ancestor by 'Aḍud al Dawla is significant in that, according to legends he was raised by three nurses, two Arab and one Persian, his future rule was foretold at his birth; when he was a boy of five he was far above the intellectual level of his age, and as king he mastered 10 languages. He was also associated with lions, and defeated two lions who guarded the crown and the royal robes, and the lion, like the sun was the symbol and guardian of kingship, and recognised as such by 'Aḍūd al-Dawla. (Busse 1973).

7. For the ceremony of his investiture by the Khalīfa, 'Aḍūd al-Dawla had apparently studied the rock reliefs of the Sasanians, his ancestors, since he is known to have visited Iṣṭakhr on at least two occasions and to have made various enquiries about these reliefs while he was there. Apparently in the view of 'Aḍūd al-Dawla, the kingship and the Khalifate were two totally different expressions of power, and there was no delegation of power from one to the other at the time of the investiture - despite undoubted feelings to the contrary in the mind of the Khalīfa himself (Busse 1973:63-4).

8. 'Aḍūd al-Dawla, Abū Shujā' Fannā Khusraw, son of Rukn al-Dawla the Būyid amīr al-Umarā', was born in Isfahan in 324/936. After the death of his father and the defeat of his cousin Bakhtiyār, he became overall ruler of most of the Būyid territories in Iraq and Iran by 368/979. He died in Baghdad in 372/983. He is generally regarded as the greatest amir of the Būyid dynasty, and carried out a major building campaign in imitation of his Sasanian ancestors for whom such a programme was part of the attributes of Kingship. In particular he built the Band-i Amīr across the Kūr in Fārs and Hospitals in both Shiraz and Baghdad. He also built a new Mausoleum over the grave of 'Alī in Najaf, where he himself was buried, and built a number of libraries and palaces in and around Shiraz (Bowen, E.I.).

9. This was first versified as the Shāhnāma at this time but was based on traditional legends forming part of the Persian epos dating back to the distant past, but known in written form during the Sasanian period.

10. The Shāhnāma was completed in 400/1010. In 394/1004 Firdawsī decided to dedicate the Shāhnāma to Sulṭān Maḥmūd of Ghaznī who, although of little erudition himself, gathered at his court, by forcible means if necessary, men of learning and letters. Various stories have been handed down of his non-acceptance, or at best grudging acceptance of the Shāhnāma, and his subsequent repentance, when he is said to have sent a caravan of cobalt to Firdawsī at Tūs, but as the caravan entered one gate of the town, Firdawsī's funeral cortege was leaving the other. Firdawsī's daughter refused the money, and Maḥmūd therefore ordered it to be expended on building a caravanserai, supposedly that of Rabāṭ-i Māhi. However the basic problem was probably linked to the fact that Firdawsī was a Shī'ī and Maḥmūd a Sunnī, each enthusiastically (Huart, E.I.).

11. Abū'l-Ḥārith Aḥmad Sanjar b. Malik Shāh (Sanjar is Turkish for 'he who thrusts, pierces'). After the death of Arslān-Arghūn in 490/1097, Berk-Yaruq appointed his half-brother Sanjar, then only 10 or 12, to be Governor of Khurāsān. Sanjar remained ruler of the east, and the senior of the Saljūqs, until shortly after his escape from captivity among the Ghuzz; the hardships which he suffered there seem to have hastened his death in 552/1157 (Bosworth 1968:135). The problem of the status of the Shāhnāma is discussed in detail with reference to its position in the view of contemporary poets in M.R. Shafī'i-yi Kadkanī, Suvar-i Khiyāl dar Shi'r-i Fārsī, Tehran 1349, pp. 183-91.

12. According to the Shāhnāma both Tūr and Īraj were the sons of Ferīdūn who had divided his vast dominions among his three sons. Īraj, to whom had fallen the portion of Īrān, was killed by his

brothers, and his descendants waged long wars against the descendants of Tūr, the Tūrānians.( Browne I, 1969:115-6).

13. A section of the Shāhnāma in which the monster Dahāk has been metamorphosed into an Arab and given the arabic form of Ḍaḥḥāk has been interpreted as an expression of race hatred between Persians and Arabs by certain authors (Browne I, 1969:114).

14. The Umayyad penetration into Transoxiana brought a trickle of Turkish domestic slaves into households of the Arab and Persian upper classes, but by 'Abbāssid times, the governors of Khurāsān and the east regularly sent contingents of Turkish slaves in their tribute and presents to Baghdad. This trade reached its peak of organisation under the Sāmānids of Transoxiana and Khurāsān when the stipulated revenue of Khurāsān included a levy of 12,000 slaves a year (Bosworth 1973:4-5).

15. The disorders caused by the Turkish troops in Baghdad who had no concern for the local populace and who would gallop and collide with people when they went out riding being solely responsible to the Khalīfa caused considerable disorders in the capital, and as a result al-Mu'taṣim decided to leave Baghdad and found a new capital higher up the Tigris. In 221/836 he fixed on the site of Sāmarrā (Creswell 1968:259).

16. Ikhshīd was the generic title of the rulers of Farghāna, and Ṭughj was the son of a Farghāna officer in the service of the Khalīfa who rose to be Governor of Damascus, but was eventually

disgraced and died in prison. His son Muḥammad retrieved his father's misfortune and became in turn Governor of Damascus in 318 and in 321 Governor of Egypt, although he did not take over the office until 323/935. In 327/938 he assumed the title Ikhshīd and in 330/941 Syria was added to his dominions together with Mekka and Medina in the following year. He died in 334/946 (Lane-Poole 1925:69).

17. The origin of the Ghaznavid power is somewhat complicated in that it was originally founded by Alptigīn, one of the Turkish slave Generals of 'Abd al-Malik the Sāmānid, 343/954 - 350/961. After the death of 'Abd al-Malik, Alptigīn was deprived of his power, and retired to Ghaznī where his father had been the Sāmānid Governor and where the son had succeeded to his father. He was succeeded by his son Isḥāḳ in 352/963 and then by his slave Balkātigīn in 355/966, butthe true founder of the dynasty was Sabaktigīn, another Turkish slave of Alptigīn who had married his daughter, who came to the throne in366/976 and ruled for over 20 years. During this period he accepted the position of vassal to the Sāmānids, but this was purely nominal, and by the time of his death in 387/997 he had become more powerful than his liege-lord. His son, Maḥmūd of Ghaznī was one of the most powerful princes of his time and one of the greatest figures in Islamic history (Lane-Poole 1925:285-6).

18. Although the Būyids officially supported the Khalīfa, the Ghaznavids used the heterodoxy of the Būyids as a pretext for occupying their territory (Busse 1973:67).

19. The various ways in which these ancient Persian concepts

dating back to the Sasanian period were revived under the Būyids, particularly during the reign of 'Aḍūd al-Dawla, have been examined in detail by Busse, both in their honorific side as in the nomenclature, and in the more substantial form of insignia and the various royal appurtenances. Almost all of these were substantially taken over subsequently by the various Turkish dynasties, despite overt protestations to the contrary (Busse 1973:47-69).

## Chapter I. The Function of the Minaret.

Before embarking on a discussion concerning the development of the minaret in any particular area at any particular time, it is first essential to determine exactly what a minaret is, what function it fulfils, and whether it is possible to state that anything which fulfils these functions is therefore a minaret. I propose to begin with a discussion of the function of the minaret before going on to consider the various types of structure which are capable of fulfilling such functions.

The most common word in Arabic for minaret is mi'dhana, meaning a place from which the adhān, the call to prayer, is given. The first mosques had no specific place for the mu'adhdhin, but within a very short space of time, as will be discussed in the following chapter, the idea of a high place attached to a mosque from which the adhān could be given had found universal acceptance among the Muslim community. This then is the most widely used and most obviously correct word in arabic for a minaret(Note 1).

A second word manāra, from which is derived the western term 'minaret', means an object that gives light, or a place of light (Creswell 1927: 134). At first sight this is not an obvious term which should be applied to a minaret whose essential function would appear to be that of serving as a place from which the call to prayer could be heard by as many people as possible, however there are certain other associations of the word 'light' which have to be considered in addition to the purely practical aspect of manāra.

Perhaps the most esoteric verse in the Qur'ān is verse 35 of sūra 24, the 'Light' sura. Al-Ghazzālī has written an important treatise, Mishkat al-Anwār, 'The Niche for Lights', expounding the meaning of this verse, and the connection between Allāh, who is pure light, and his revealed word, which is the Qur'ān (Gairdner 1952). From early times a light has been associated with the miḥrāb, either actually or figuratively embodied in the decoration: likewise a lamp figures in the design of a considerable number of prayer mats, in addition to the directional niche. Lamps are therefore associated with prayer, and light with the Word of God. An expository translation of the term manāra would therefore mean the Place of the Light (of Islam), which would lighten the hearts of the believers when the adhān, the Word of God, was given from it. A Place to spread the Light (of Islam) to the believers.

This religious concept of the word manāra may of course be a subsequent justification of a much more practical and secular reason for the use of the word to describe a minaret. The most obvious derivation would be from the light carried by the mu'adhdhin when he climbed the stairs to give the adhān. For the people who were unable to hear him, the appearance of his light on top of the minaret would indicate the time for prayer. Its use to designate some form of lighthouse is however, of more critical moment.

Creswell (1927:134) describes the use of the word manāra in early Arabic poetry to describe the oil-lamp or rush-light in the cell of a Christian monk, and that from there it was used later to describe the Pharos and lighthouses generally. Only after this was it used

to designate mosque towers, and that was because they had a light burning on the top of them to serve as a guide-point or beacon.

The idea of having a light burning in a high place to guide travellers is an old one in Arabia, where often a fire was burnt on a mountain top for this purpose. This is referred to by the poetess al-Khansā when, on the death of her brother, she described him as a light on a high place, implying that he was a guide to the people who knew him (Note 2). This idea is easily transferred to the minaret tower where a light was kept burning as a similar guide-point.

Lighthouses as such were of considerable antiquity in the Mediterranean world, the most famous being that of the Pharos, which has its place in the history of the minaret (Note 3), while other lighthouses were situated at the entrances to the various harbours along the North African coast, as at Leptis Magna. This idea was speedily taken up by the Arabs for whom the towers on the coastal Ribāts (Note 4) served as both lighthouses and as beacon fires to give warning of the approach of pirates (Diez, E.I.). In Tunisia, in addition to the surviving examples as at Sousse and Monastir, literary and archaeological research has enabled a picture of the complete chain of Ribāṭ towers to be formed, discussed in greater detail in the following chapter, which indicates the importance of these towers which served principally as lighthouses.

The need for such lighthouses can easily be accepted along the coast, and to guide the way into harbours, but it is perhaps less easily

understandable when applied to inland regions. However for a number of different reasons, both climactic and religious, the life of the Muslim within his own home tends to be inward looking, and, in consequence, presents few outward manifestations of his presence in the form of lights. There is often therefore a necessity for some form of beacon at a point central to any community, which should act as a navigational aid, particularly at a time when even major trade routes were little better than tracks (Note 5). The most obvious point to fix such a light was on the mosque tower, the highest point in any community, and possibly the only high point. The subsequent extension of this idea to a major communications problem linked to the postal services is discussed in Chapter VI, under the Spread of the Iranian form of the Minaret, but in many ways this is merely an extreme extension of the beacon idea already set out.

The existence of a light kept in the top of Iranian minarets is attested by a number of literary references (Browne 1969:367), in addition to those already mentioned as referring to the existence of a light on towers in the coastal regions. One of the most amusing refers to the prediction by an astrologer of an approaching storm, but apparently on the night in question there was not even enough wind to disturb the flame on top of the minaret (Ibid)! In so far as can be ascertained, the flame was probably formed by burning bitumen in some form of terracotta bowl. Bitumen is widely distributed in Iran, and would therefore have been ideal for this purpose, and would also have provided, by its slow burning properties, a light for a sufficient length of time.

Thus the use of the term manāra for a mosque tower can be justified on both religious and practical terms, however a certain complication sets in because the word is used, correctly, to label towers which only act as lighthouses or beacons, and are in no sense associated with a mosque. While the function of acting as a lighthouse or beacon can be performed by a minaret, it does not follow that any tower which performs this function is therefore a minaret. Despite the fact that the word minaret obviously derives from manāra, and that a great number of minarets are also manāra, it is essentially their function as mi'dhana which qualifies a mosque tower to be called a minaret. It is therefore important that the precise function of a tower be known before it can be called a minaret in translation; the use of the term manāra in arabic being in fact more likely to denote some form of lighthouse. The whole of this question is complicated still further by the fact that the only word used in Persian to denote a minaret is manāra, the use of the term mi'dhana being almost unknown there. There is however a further word in Persian mīl which simply denotes a tower, and should be translated as such.

In his article on the "Evolution of the Minaret" (1927:134) Creswell refers to the use of another term for minaret, ṣauma'a, or ṣawma'a. He suggests that this was the name given to hermits' towers, and cites two examples; the monk who occupied the tower of the Church of John the Baptist at Damascus and refused to leave it when the Khalīfa al-Walīd commenced to demolish it prior to building the Great Mosque; and a Muslim recluse who occupied the western minaret of the same mosque at the time of the visit of Ibn Jubayr. In each

case the word used is ṣawma'a. Creswell then says, citing Doutté and Marçais, that this is the term employed throughout North Africa (for minaret). He further quotes Maqrīzī's Khiṭāṭ (Ibid:137) with reference to the building of specific places fro the adhān at the mosque of 'Amr in Fusṭāṭ, saying that the Khalīfa Mu'āwiya ordered Maslama, Governor of Egypt, to enlarge the mosque of 'Amr and "to build ṣawāmi' (pl. of ṣauma'a) for the adhān. So Maslama constructed four ṣawāmi' for the mosque at its four corners." He then quotes Corbet (1890:771-2), saying:- "It is difficult to say what the exact form of these may have been. The name ṣawāmi', given them by our authority (Maqrīzī), is neither of the words ordinarily in use for minaret. In all likelihood they were but something like sentry-boxes, perched on the roof at each corner; the germ of the future graceful sky-pointing minaret."

It is from these sources that Creswell has decided that the word ṣauma'a/ṣawma'a is a third term to be used for the minaret. It is therefore important to examine the various sources to which he refers to ascertain whether this is a valid descriptive term to employ for the minaret in any of its functions, or whether the minaret can have the function implied by the use of the term ṣawma'a.

The most important source to which both Creswell and Corbet refer is Maqrīzī's Khiṭāṭ, vol. II, p. 246 in the Cairo non-dated edition (Note 6). Line 14 is the one which refers to the order of Mu'āwiya to Maslama b. Makhlad al-Anṣārī, then Governor of Egypt, to build the ṣawāmi'. Obviously much depends on the exact translation given to ṣawāmi', and there are a number of possible interpretations, all

of which make extremely interesting reading. Using the dictionary Al-Munjid, 13th edition, Beirut, 1952, these definitions emerged: 'a mountain; a high place for the priest (the word used is rāhib meaning a Christian priest) or hermit (muta'abid, again Christian); and then the word was given to mean a monastery. It also means the tip or end of the burnous when it is pointed, and also the top of a mountain if this is also pointed. However, when linked with al-binā it quite definitely means to heighten. The text reads:- bi-binā al-ṣawāmi', which must therefore mean 'to heighten'. I would therefore suggest a translation for the line in question as :- And it is said that Mu'āwiya ordered the building of high places for the call to prayer, and he (referring to Ibn Lahi'ya by whom it is all reported) said Maslama made for the congregational mosque four high places in its four corners, and he was the first to have done so, and there was not formerly.(Note 7).

The line in question is preceded by an eight line poem eulogising Maslama for perfecting the mosque of 'Amr at Fusṭāṭ which also uses the word ṣawāmi'. This poem was written by, or rather said by 'Ābid ibn Ḥishām al Azdī (Note 8), then by Sulāmānī to Maslama. The interesting line reads:-
'And how many good deeds you have done, (among them) plaiting (building) high places for the call to prayer.'(Note 9).

The word ṣawma'a has always been well-known in Arabic, but has always had a Christian connotation, as I have shown from the dictionary definition, however the ultimate authority for this must be the Qur'ān, and verse 40 of sura 22, the Pilgrimage, refers to ṣawāmi'

in a context which cannot be other than Christian, and which Pickthall (1963:245) translates as 'cloisters' (Note 10). Since this connotation must have been known to Maslama, and also to Maqrīzī, the use of the word in this context must be taken to mean to build the corners higher, as in the ṣawāmi' which the Christians have.

It is interesting to note how the subject is treated in the other instances cited by Creswell. Lane in his 'Manners and Customs of the Modern Egyptians' translates the entire passage in Maqrīzī (1966:604), and translates ṣawāmi' as 'towers'. Schwally (L.I.I : 144-5) discusses the translation of ṣawma'a and suggests 'kloster' or 'einsiedelei'. He then suggests that the lamps of the monks and hermits caused the Arabs poetically to link ṣawma'a with manāra. Since manāra also mean lighthouse, he then goes on to suggest that the Arabs maintained the use of the word ṣawma'a for a minaret in order to be able to distinguish the two. Guest (1920:632) refers to the section in Maqrīzī when reviewing Rivoira's 'Moslem Architecture', and quite simply says that ṣawāmi' means 'minarets'.

The other important point which Creswell mentions, and to which I have already referred, is the fact that the term ṣawma'a is the current term in North Africa for describing a minaret. He cites both Doutté and Marçais as his authorities for this statement (Note 11). In so far as I have been able to pursue my own researches in this area, I have found the term used for minarets in Morocco, Algeria, and Tunisia. In Libya the word is used alternately with mi'dhana. As far as the remainder of the Arabic speaking world is

concerned however, the word sawma'a has a purely Christian connotation and is never used to describe the minaret.

Creswell has suggested that the link may be because all Syrian towers before the thirteenth century were square, "and in this connexion it is specially interesting to find that this word is the term employed throughout North Africa, where the minarets are nearly always of this type."(1927:137). As will be shown in the chapter on the history of the minaret, those in the Maghrib are closely linked to the development of the minaret in Spain, and Gottheil (1909-10:133) in an article quoted by Creswell, suggests that the word sawma'a has its Spanish equivalent in the word zoma.

The use of the word sawma'a to describe a minaret must therefore be accepted with regard to western North Africa, and possibly for Spain, but, while the word itself is used, is it possible for the function implied in the reading by Creswell to be performed by a minaret. Basically the idea of a hermitage within a minaret attached to a mosque would be not merely unorthodox but impossible for a Muslim. The Muslim hermit or recluse retires to the desert or to some lonely spot to commune with God. While people do live in rooms attached to the mosque both for study and prayer, they must of necessity mingle with the other Muslims at least five times a day to perform the ritual ablutions necessary before prayer. Since this is not a Christian requirement or obligation, the phenomenon of the Stylites was possible (Note 12), but this form of extremism would be distinctly un-Muslim.

There would thus appear to be a certain confusion over the various

words which can be translated to mean 'minaret', and it is only by reference to the function implied in the use of each word that clarification can be found. Over the word mi'dhana there is no problem since it denotes the one function of a minaret which is accepted as being the basic function by all sources. With manāra there begins to be a certain ambivalence in that it can be used to refer to a lighthouse or beacon tower simply, as opposed to a minaret which might perform the function of manāra in addition to that of mi'dhana. In Iran however, this is the only word used to refer to a minaret, and should therfore be so translated. With the word ṣawma'a a considerable problem emerges in that, although used nowadays in the Maghrib to refer to a minaret, and therefore correctly so translated, its use for a minaret should not be taken to imply that a minaret also has the function that could be ascribed to a ṣawma'a, that of being a hermitage, which I take as being implicit in the discussion of this problem by Creswell. Its original use as quoted by Maqrīzī shaould be taken as an analogy, to build the corners higher forming some form of towers like the ṣawāmi', using a word which would be understandable to Maslama. While it can be accepted that ṣawma'a is a word used in the Maghrib for minaret, it does not mean that this therefore constitutes a further function of the minaret itself.

Chapter I. Notes.

1. When the Muslims first went to Madina they prayed without any call to prayer, but having heard the Jews use the horn, and the Christians a nāqūs or clapper, they wanted something equivalent for their own use. Some traditions suggest that it was 'Umar who suggested using the human voice to call to prayer who found that, when he came to communicate the decision he had just been anticipated by the Angel Gabriel. Another tradition has it that it was 'Abdallāh b. Ziyād who had it revealed in a dream (Creswell 1927: 137).

2. Al-Khansā, the greatest poetess of the Arabs. She was born in pre-Islamic Arabia. Her poetry was coloured by extreme despair on the death of her brothers, first Mu'āwiya who was killed in a feud, and then Ṣakhr who was killed after avenging his brother's death. Al-Khansā lived long enough to see the triumph of Islam, and was reproved by both the Khalīfa 'Umar and by 'Ā'isha for her unreasonable mourning for her brothers, especially Ṣakhr. Islam had no real influence on her or on her poetry (Krenkow, E.I.).
The line in question is:-

وان صخرا لتأتم الهداة به
كأنه علم في رأسه نار

A translation of which would read:-
'and Ṣakhr is standing there for your enlightenment, as a mountain with fire on its top.'
'Alam, which I have translated as mountain, also has the meaning of 'lance', 'flag', and 'manāra'. In this context it is also important to note that it is nār, 'fire', which is written, not nūr,'light'.
(Le Diwan d'al Hansa'. trad. Le P. de Copplier, S.J. Beyrouth 1889: ٢٧)

3. The place of the Pharos in the general development of the minaret has been discussed by a number of authorities, in particular Thiersch, and these will be cited in the appropriate places, mainly in Chapter II concerning the History of the Minaret.

4. The Ribāṭ was essentially a fortified Muslim monastery, closely linked to the duty of jihād, holy war, imposed on all Muslims. The Ribāṭs were fortresses on the frontiers of Islam, particularly at exposed places on the frontiers, and were garrisoned by men who can only be described as fighters for the faith. Signal towers were attached to these and, it is said, that a message could be sent in one night from Ceuta to Alexandria (Gibb and Kramers 1961:473-5).

5. In this connection it must be remembered that the majority of caravan journey were performed at night, and until modern times this has always been the preferred time to travel before the heat of the sun has made such journeyings unpleasant. In his 'Year Among the Persians', Browne describes a night journey across the desert to Yazd by starlight, and even today, most journeys in Iran, including domestic flights from Tehran to other parts of the country, start at an extremely early hour so that the bulk of the journey may be accomplished before the heat of the day sets in.

6. Al-Maqrīzī - Abū'l-'Abbās Aḥmad b. 'Alī b. 'Abd al-Ḳādir, al-Ḥusainī Taḳī al-Dīn. An Arab historian who was born in Cairo in 766/1364 and who died, also in Cairo in 845/1442. The Khiṭaṭ was his principal work, being based largely on the work of al-Awḥadī, but without acknowledgement (Brockelman, E.I.).

7. Line 14, p. 246, Khiṭaṭ vol. II, in the Cairo non-dated edition reads:-

وقيل أن معاوية أمر ببناء الصوامع للأذان
قال وجعل مسلمة للمسجد الجامع أربع صوامع في أركانه الأربع.

8. I have been unable to find anything relative to this unknown poet, the name al-Azdī however presumably refers to a member of one of the two ancient tribal groupings of the Azd, the one in the highlands of 'Asīr (Azd Sarāt) and the other in 'Umān (Azd 'Umān) (Strenziok, E.I.).

9. Ajdal has the feeling of plaiting or twisting a rope or hair. It also has the sense of elongating, and is probably used here in a very poetical sense to mean the heightening of the corners by, as it were, drawing them out.

The arabic text reads:-

وكم لله من مناقب صالحات
وأجدل بالصوامع للأذان

10. The arabic text of the Qur'an refers to ṣawāmi', bī'a, ṣalawāt, and masājid. Pickthall has translated them as 'cloisters','churches', 'oratories', and 'mosques' respectively. Certainly ṣawāmi' has the feeling of something appertaining to the Christians, whereas bi'a could be either Christian or Jewish. Ṣalawāt simply means 'praying places', and is therefore correctly given as 'oratories'. All however must refer to the 'people of the book'.

11. Marçais in Les Monuments arabes de Tlemcen, p. 45, says apropos the minaret, with no reference or explanation '(dans toute l'Afrique du nord çauma)'.
Doutté in the Revue Africaine, 1899, p. 339 ff. (not 399 as Creswell writes), says 'L'emploi du mot صومعة, çawma'a, qui signifie originalement "cloître, ermitage", pour designer les minarets, marque bien le rapport qui existe entre ceux-ci et les clochers des eglises chrétiennes.' And later on page 346, 'Le mot manara, du reste, n'a pas dans l'arabe vulgaire du Maghrib, le sens du "minaret", mais seulement celui de "phare". C'est le mot صومعة, çoûm'a, qui est employer
ici exclusivement pour designer les minarets.' There is likewise no further explanation or comment.

12. The Stylites were monks who lived on top of columns, from the Greek stylos, column. They were ascetics, and the idea seems to have originated in Syria.

## Chapter II. The History of the Minaret.

Having discussed the functions of the minaret, it remains to be seen how these functions were given form, and how the architects in different parts of the Islamic world, following the varying traditions of building and design, chose to create their minarets in such a way as to fulfil the requisite functions and at the same time present a reasonable manifestation of the building styles and techniques of their regions.

In order to appreciate the difference between the Iranian form of the minaret and those of its western counterparts, I have chosen to give a comprehensive outline of the history of the minaret, followed by a description of the forms it assumed in the various countries of the western Islamic world before beginning the main analysis of the Iranian examples.

In the earliest mosques there was no minaret. The idea of using the human voice for the call to prayer and the origins of this idea have already been discussed (p. 28, n. 1), and whoever suggested the idea to Muḥammad, whether it was 'Umar or 'Abdallāh ibn Ziyād, or whether it was by direct revelation, it is certain that Bilāl, who was Muḥammad's herald, was appointed the first mu'adhdhin (Creswell 1927:137). He was in the habit of using the roof of the highest house in the neighbourhood of the first mosque, which was Muḥammad's house in Medina, an idea which, despite the existence of a minaret, is still in use today (Note 1).

The first mosques, those of Kūfa and Baṣra, were both built in the year 17/638 (Creswell 1969:22-6), but nothing is said about a minaret being built at the same time. This is also true of the mosque of 'Amr at Fusṭāṭ, and Creswell (1927:137) refers to the poet al-Farazdaq, c.20/640-1 - c.114/732-3, who speaks of the adhān as being chanted on the wall of every city.

It is only with the Great Mosque of Damascus that there is the first reference to towers which were used for the call to prayer (Ibn al-Faqīh, cited Creswell 1927:137). The temenos of the old great temple had four low square towers, one at each corner, the south-eastern one of which would have been contiguous with the earliest mosque which apparently shared the temple area with the basilica of St. John. Following Creswell's (1969:156-96) summary of the conversion of the temenos to mosque plus church, and then later, under al-Walīd, into the Great Mosque, we have the existence of the four corner towers at least to the level of the top of the wall. These towers would have been furnished with staircases, so that, even if the adhān were to have been given from the top of the wall, the most convenient point of access would have been the corner towers.

Hence everthing agrees with the likelihood that they were used for the adhān, and since they formed distinguishable structures from the remainder of the enclosing wall, they were quite correctly referred to as mi'dhana by Ibn al-Faqīh, 903, even though he knew that they were older than Islam (Creswell 1927:137). Thus the idea of a distinct place from which the adhān could be given, may be said to have received its genesis completely fortuitously because

of the arrangement of the temenos in Damascus.

Apparently the idea was swiftly taken up, and within a comparatively short time it was much further developed. In 53/673 the Khalīfa Mu'āwiya ordered Maslama, the Governor of Egypt, to enlarge the mosque of 'Amr (Note 2), and to build high places for the adhān (Maqrīzī n.d.:246). Maslama therefore built high places at each of the four corners, undoubtedly influenced by the four corner towers of the temenos at Damascus (Note 3).

The form which these sawāmi', high places, took is of considerable interest. Unfortunately Maqrīzī is already quoting Ibn Lāhi'ya, and is therefore not very detailed about the actual form they assumed; as Corbet suggests (1890:771-2), they were probably only something like sentry-boxes perched on the roof at each corner, but there are certain other points mentioned which indicate a type of minaret. Maqrīzī states quite distinctly that the ladders by means of which the mu'adhdhins mounted, were in the street until Khālid ibn Sa'īd transported them inside the mosque. This implies that they were in fact solid, at least up to the height of the walls, since otherwise there would have been a means of ascent within the towers themselves (Note 4).

This is certainly the form which the staircase minaret still takes, a form which Schacht (1938:1961(i):1961(ii)) has demonstrated to be extremely widespread in the Islamic world, and which I recently saw in the Jabal Nafūsa in Libya (Note 5), and Whitehouse (1972: 155-8) has recently described in Iran. As revealed in the recent excavations in Libya (Blake, Hutt, Whitehouse), it was a common

form in early Fāṭimid times (Note 6), and, as in the Great Mosque at Sousse, Tunisia, attained considerable magnificence even before that date (Lezine 1966:93-115). In his analysis of the 'Amr mosque, Schacht suggests (1938:12) that they were simply bastions, built to roof height, accessible by means of an outside staircase, and not until much later were they replaced by towers carrying an internal staircase. This form of minaret is thus the earliest form, and still continues in use.

The idea of having four minarets, one at each corner of the mosque, can be demonstrated to have originated with the temenos of Damascus, but only seems to have been continued in Umayyad Syria (Note 7). Al-Walīd certainly built four when he reconstructed the mosque at Medina (Creswell 1927:138;1969:149), apparently the first time this mosque had been provided with minarets at all, and Creswell (1927: 138) refers to four, at least as early as 300/913, for the Ḥaram area at Jerusalem. Elsewhere at this early period, there are no traces of such a system, and it was not until much later, particularly under the Ottomans who developed the idea of multiple minarets enthusiastically, and also the Mamluks in Egypt, that the idea took root again (Note 8). The twin-minaret portals of Iran have a completely different origin, emphasising the portal rather than acting as multiple minarets.

The oldest remaining minaret in Islam is that of the Great Mosque of Qayrawān. The mosque was originally founded by'Uqba ibn Nāfi' (Note 9), rebuilt by Ḥassān ibn al-Nu'mān in 84/703 on the original lines, but proved too small, and was enlarged by Bishr ibn Ṣafwān, Governor of Qayrawān in the reign of the Umayyad Khalīfa Hishām, 105-25/724-42-3. Bishr was Governor during the first three years

of the reign, and therefore this limits the reconstruction of the mosque to 724-7. At the time of this reconstruction and enlargement, a minaret was built. This mosque, with the exception of the miḥrāb and the minaret, was destroyed by Yazīd ibn Ḥātim in 155/772, and rebuilt in 157/773-4. This mosque in turn was destroyed and rebuilt by the Aghlabid Ziyādat Allāh I in 221/836 (Note 10), which latter mosque, with the exception of certain additions, is basically that of today (Creswell 1927:138;1969:518-21;Lezine 1966:11-73;Marçais 1927:15-32). It remains to determine the date of the existing minaret which has aroused considerable speculation. All the arguments so far have been based on close examination of the existing structure, but have not profited by the recent excavations at the base of the minaret and also in other parts of the mosque (Note 11).

As described by al-Bakrī (trad. de Slane 1913:53) there was a large garden immediately to the north of the mosque and Hishām ordered the purchase of this land and its inclusion within the mosque. Al-Bakrī further states that there was a cistern which served as the foundation for the minaret, and this is the reason why the minaret is not axially sited. Lezine (1966:50,n.1) dismisses this explanation in his detailed analysis, and states that the cistern can still be seen exterior to the mosque enclosure near the north-west angle of the minaret. The recent excavations showed that not only did the minaret extend for a further three metres below the level of the present courtyard, but that it is sited exactly on top of a cistern (Note 12). In so far as I was able to ascertain from a comparatively cursory inspection, there was no break in bond between the lower courses of the existing minaret and those of the hitherto concealed base (Note 13).

As a result of these excavations I am convinced that the minaret is that of Hishām, as described by al-Bakrī, with the lower section covered by the raising of the floor level (Note 14). It remains to determine the origin of the form of the Qayrawān minaret.

So far two main sources of possible origin for the western minaret forms have been suggested, the square Syrian church towers, and the Pharos of Alexandria (Creswell 1927:138,252). The Syrian church towers were of considerable influence in the design of the Syrian minarets and subsequently to the Spanish ones (Note 15), but I would disagree with Creswell in suggesting that they influenced the construction of the Qayrawān minaret. Since both Creswell and Lezine are in agreement in establishing that the lower two stages are contemporaneous, at least a two-storeyed prototype is required. Further the walls are battered, and this appears a crucial point since construction methods did not require this for stability. Sui generis the Syrian towers are single-storeyed, square, upright forms, and, as I will demonstrate, the minarets which derive from them are also of the same shape. The towers with inclined sides are the exception in Syria, and Creswell (1927:139) is only able to cite one example, that of Sameh.

The second hypothesis, which links the Qayrawān minaret with the Pharos (Thiersch 1909:124) has been successfully demonstrated to be unsound by Creswell (1927:139), despite the long argument by Thiersch, or indeed because of it, since Creswell rightly uses his own arguments against him.

There remains a third possibility which Lezine (1966:48) mentions,

and which seems to me to be much more reasonable. At Salakta south of Mahdīya and only 90km. from Qayrawān, the harbour was defended by a fort which also contained a lighthouse, and Lezine has found a representation of this work on a tile at Ostia. Although pre-Islamic, this lighthouse was apparently still in order in the eleventh century when al-Bakrī wrote, since he mentions the harbour and fort as still being in use, and the harbour certainly required the light-house. This tower was in three stages, the uppermost a domed shape, while the lower two storeys had inclined sides. Although much smaller than the Qayrawān example, the intrinsic form is the same. Furthermore, as Lezine points out, most of Qayrawān would have been built of mud-brick at this time, and inclined walls are almost symptomatic of this type of construction.

I would therefore suggest that Qayrawān is the first example of an indigenous minaret style, native to North Africa, rather than the offshoot of the Syrian form. This style continued under the Aghlabids, and there are two further important examples of it, the minaret of the Great Mosque of Sfax (Note 16), and the Khalaf tower of Sousse (Note 17). This latter however has a different internal structure which foreshadows a later structural development. Whereas that of the minaret of Sfax, like that of Qayrawān has an internal staircase built around a square central core, the internal staircase of the Khalaf tower is situated in the thickness of the outer wall, and instead of turning around a solid central core, moves around a series of rooms which are entered from the staircase landings. One of these rooms contains a small oratory, however there is no indication that there was any mosque attached to this

tower, and although the shape is important and it certainly falls within the Qayrawān group, I would not include it in the category minaret.

At this point it is convenient to discuss the question of the Ribāṭ towers of this area, although, as I have already indicated, they do not necessarily fall within the category of minaret. The oldest extant example is that of Monastir which was built in 180/796 (Note 18), while the next in date is that of the Ribāṭ of Sousse, 206/821 (Note 19). Both of these consist of circular towers built onto the solid square bases of the original corner towers or bastions.

These towers were essentially look-out towers to warn of the arrival of pirates or other raiders, and were able to signal the news of an attempted landing to the other towers by means of beacons; thus that of Sousse communicated with that of Hergla to the north and with that of Monastir to the south. Further on towards the south lay the Ribāṭ of Lemta, and later an additional one was inserted between Sousse and Monastir, that of Skanes, but no traces remain of these other Ribāṭs. As far as can be ascertained these towers solely performed the function of manāra, and as such should not be classed as minarets (Note 20). The particular construction method adopted however, that of placing a circular tower onto a solid base, is of considerable interest, and affected the subsequent design of minarets in the region (Note 21).

The only surviving minaret to have a form which could be regarded as being based on this idea is the minaret of the Great Mosque of Sousse. This was built in 237/851 (Lezine Sousse: 35-41) and is

a staircase minaret, a double staircase rising from the interior of the courtyard to the octagonal cupola for the adhān. This is sited on one of the corner towers of the mosque, a solid, circular stone-built bastion, sited nearby the solid square bastion of the Ribāṭ.

An important application of this principle to minaret construction occurred at the beginning of the tenth century under the earliest Fāṭimids. Quoting al-Bakrī and al-Tijānī both Creswell (1927:140) and Thiersch (1909:138) refer to the minarets of Ajdābiyah and Tripoli, the former having an octagonal minaret, and the latter a circular lower section and an octagonal upper part. Recent excavations in Libya once again confirm the exactitude of al-Bakrī's description and allow this to be exactly described (Note 22).

In Ajdābiyah the minaret consisted of a solid square stone base, approximately 4m. high, which was situated in the single arcade which ran on all four sides of the sahn, which base probably extended to the ceiling height of the arcade. Above this rose an octagonal tower which may have contained a spiral staircase, whereas the top of the base was reached by an external staircase. We thus have a combination staircase minaret surmounted by an octagonal shaft minaret, similar to that of the Great Mosque of Harput in Turkey (Note 23).

The mosque of Madīna Sulṭān on the Gulf of Sirte, like that of Ajdābiyah probably founded by Abū al-Qāsim ibn 'Ubayd Allāh during the reign of his father the first Fāṭimid Khalīfa (Note 24), also

had a similar minaret, an octagonal shaft on a solid square base (Note 25), but so far excavations have thrown no light on the external staircase leading to the shaft, which may well have been constructed in mud-brick and consequently have disappeared. The mosque of Zawīla in southern Libya, although probably slightly later, apparently had the same ground plan as those of Ajdābiyah and Madīna Sulṭān, while the minaret appears to be a solid rectangular tower with a ramp as opposed to a staircase leading to it. There are no indications for any form of superstructure for this minaret.

The description by al-Tijānī of the minaret of the Tripoli mosque (Creswell 1927:140), now completely disappeared, would thus accord perfectly with this general form, or may in fact have been a combination, and was probably a precursor of the others. He described a circular base and an octagonal upper section. Assuming the existence of a round corner tower, as at Sousse, presumably solid, this would have been surmounted by an octagonal shaft as at Ajdābiyah and Madīna Sulṭān.

The origins of the circular or square solid stone base can thus be demonstrated to lie within the region, but the octagonal shaft is perhaps of a different provenance, despite the domed octagonal pavillion which surmounts the staircase minaret of Sousse. The Fāṭimids originated in Mesopotamia but spent some time in Egypt on their way to Ifrīqiya, and constantly directed their thoughts to returning to Egypt as conquerors. Since this form is specifically Fāṭimid an Egyptian prototype may be sought for it. I think that it is at this point that the arguments of Thiersch for the use of

the Pharos as a model have some validity, since he has perfectly demonstrated that the second storey of the Pharos was octagonal upon a square base (1909:97). Unfortunately there is a very strong argument against this theory in that the upper section of the Pharos was destroyed in an earthquake in 180/796-7, and apparently only the square section was left standing, upon which Ibn Ṭūlūn built a dome. Nonetheless descriptions of this incredible tower must have been available at the time when 'Ubayd Allāh stayed there, and it is possible that these descriptions may have influenced subsequent designs. Whatever the source of the idea, these three minarets, Tripoli, Ajdābiyah, and Madīna Sulṭān are the first examples of the octagonal form appearing in a minaret.

Before leaving the minarets of Ifrīqiya it is necessary to mention one other, that of al-Abbāsīya, the ninth century minaret, now disappeared, which stood in the Aghlabid palace-city outside Qayrawān. This is described by al-Bakrī as being of cylindrical form, ornamented with columns in seven stages (Lezine 1966:47,n.9). This is a form which is apparently unique, and probably represents the re-use of a considerable quantity of antique columns with which the region abounded. The description however is an exact one of the 'leaning Tower of Pisa', the campanile of the cathedral of Pisa. Since much of the Great Mosque of Mahdīya found its way to Pisa cathedral after the destruction of Mahdīya by the Normans under Roger II (Note 26), this comparison may not be as far-fetched as it sounds, and the Pisa tower may well have been built with actual columns taken from the al-Abbāsīya minaret and re-used to re-create the exact form.

The square Syrian tower form has been discussed at length by Creswell

(1927:138-9; 1969:59-61 & 520-21), and there seems to be no reasonable doubt but that the square minarets of Syria had their origin in the church towers of that area. What I have suggested above is that these towers did not affect the development in central North Africa; they were however directly imported as a style into Umayyad Spain (c.f. Note 15 supra). Most of the minarets or towers which have survived from this early period in Spain, or of which we have literary records, are square in form, eg. the minarets of Cordova, Madīnat al-Zahrā, and the towers of Toledo (Creswell 1927:139; Gomez-Moreno 1951:51,55, figs 64,77; Maldonaldo 1964:20-2). What is most interesting is to examine the penetration of this idea into North Africa, which comes, not directly from Syria as Creswell would suggest, but from Spain with the Umayyad influence.

Already in the early ninth century refugees from both Cordova and Qayrawān had settled in the new city of Fez (Note 27), thus bringing together both traditions. The Umayyad influence was strengthened considerably when in 364/974 the Umayyads sent an army to conquer the last remnants of the Idrīsid kingdom, and then acted as protectors of the Zenata Berbers against the expanding Zīrid/Sanhāja confederation based on Ifrīqiya (Note 28). Under Bologguin these latter had swept across most of what is now Morocco, but had been pushed back and eventually contented themselves with the eastern half of the Maghrib, the rest remaining to the Zenata. In the early eleventh century one group of the Sanhāja founded the Qal'a of the Banī Ḥammād (Note 29), and it is the minaret of this city which combined essential elements from both sides and led on to the next development (Julien 1970:37-76; Idris 1962:3-127; Golvin 1957:99-101).

Outwardly the minaret of the Qal'a is a square Syrian tower form, as Creswell has pointed out (1927:139), which form must have come as a result of Umayyad influence, whereas internally it is built exactly as the Khalaf tower of Sousse, having the staircase within the thickness of the walls around a series of rooms (Golvin 1965: fig. 7). The decoration also employs a device which has a North African origin, that of a series of interlocking arches (Note 30). It was the minaret of the Qal'a which formed the prototype for the great series of western minarets of the Almohads, whose first significant conquest after they had established themselves in Morocco was the subjugation of the remnants of the Ḥammādid kingdom (Note 31).

Before discussing the minarets of Egypt mention should be made of the three helicoidal minarets, the two of Sāmarrā and that of Ibn Ṭūlūn in Cairo, which form a completely seperate group, and whose origins have been discussed at length by Creswell (1968:279-80). His contention that they derive from the Babylonian zikkurat, in particular that of Khorsabad, and that of the temple of Bel in Babylon which, according to Benjamin of Tudela, survived into the second half of the twelfth century, is extremely convincing (Note 32). The Ibn Ṭūlūn minaret was originally much closer in plan to those of Sāmarrā, the present compound minaret being a much later addition (Creswell 1968:314-6)(Note 33).

Creswell (1927:252-8) has again discussed at length the minaret development in Egypt and has I think successfully demonstrated the various origins, while convincingly demolishing Thiersch's theory of the overriding importance of the Pharos. Naturally a tower

124m. high, which had stood intact until the eighth century, which had been regarded as one of the wonders of the world since its completion, and which was well-known throughout the Arabic speaking world even after its destruction, should have exercised an influence on the evolution of the minaret in Egypt at least, but this was apparently much less than Thiersch thought.

The earliest extant minaret in Cairo is that of Ibn Ṭūlūn's mosque, 263-5/876-9, whose helicoidal shape has already been discussed. The next are the two of the al-Ḥākim mosque, 380-403/990-1013. These abut the corners of the mosque facade, which in plan recalls the facade of the Great Mosque of Mahdīya. This similarity is emphasised by the existence of a monumental portal in both cases, that of Mahdīya being the first example of such a portal for a mosque (Note 34). The northern of the two al-Ḥākim minarets, now largely enclosed within a buttress of the great wall, consists of a cylindrical shaft on a nearly cubical base, while the other is a tall square shaft surmounted by a series of receding octagonal courses. I would suggest that these represent a mixture of styles from Syria and North Africa, with perhaps a touch of original Cairene genius added for good measure. Creswell(1927:257) offers no convincing ancestry, but the plan is certainly North African as is the idea of a shaft on a square base, as would be expected of the Fāṭimids: the receding octagons on a Syrian square shaft perhaps suggest some pyramidal inspiration.

The minaret of the mosque of al-Juyūshī Creswell describes as a tall square shaft with a domed lantern, precisely the Syrian church tower and Syrian minaret type (1927:257). Unfortunately for this comparison

the minaret rises in stages, and I would suggest that at first sight it would seem to have greater affinities with the form of Qayrawān. The sides are certainly not inclined, but I feel that this could be regarded as a last continuation of the North African style shading into a native Cairene style. The al-Juyūshī is dated 478/1085, and by 552/1157, with the minaret attached to the mausoleum of Abū al-Ghaḍanfar, the Cairene style had taken over, leading on to the minaret of the Madrasa of Sulṭān Ṣāliḥ, 641/1242-3, and thence to the full flowering of this style, with which I do not propose to deal.

Apart from the Sāmarrā minarets Mesopotamia does not furnish any examples of importance before the twelfth century, the earliest of which, that of the Great Mosque of Mosul, 543/1148, certainly shows Iranian influence with regard to the brick patterns, as do the other later Mesopotamian minarets, and as such do not fall within this particular section of the thesis.

Thus by the end of the tenth century a number of minaret forms had already appeared in Mesopotamia and the Western Islamic world. These ranged from the simple square Syrian tower form, which had an influence directly on Egyptian and Spanish developments, and indirectly on western North Africa; the North African group which, married to the Umayyad towers, spread westwards, and, after elaboration under the early Fāṭimids, moved eastwards to join the Syrian style in Egypt; and finally the helicoidal form, of which there were to be only three examples.

The minarets of the eastern Islamic world developed independently of these, with traditions of their own taken from other regions, but

were no less rich in the variety of the forms produced and equally varied in the sumptuousness of their decoration. Since the Islamic world is essentially unified within these apparently diverse aspects, many of these designs and patterns were spread throughout this world and translated into a variety of different media. I now propose to examine this eastern development in detail, and to describe and illustrate a number of these patterns which apparently first appeared in the Iranian world before being taken into other parts of the Islamic world both east and west of Iran.

Chapter II. Notes.

1. The usual practise today is to have a loudspeaker at the top of the minaret and the mu'adhdhin remains below with a microphone. In mosques which cannot afford this modern refinement I have seen the adhān being given from the roof of the mosque.

2. 'Amr b. al-'Ās al-Sahmī was the conqueror of Egypt, and , after a brief period of enforced retirement under the Khalīfa 'Uthmān, Governor of Egypt until his death in 42/663 when he was over 90 (Wensinck, E.I.). Although several times rebuilt the mosque is still known as the mosque of 'Amr, and was one of the few buildings saved at the time of the destruction of Fusṭāṭ.

4. According to Maqrīzī's account the four towers were used for the adhān at the dawn call to prayer at which time the noise was like thunder; thereafter the four mu'adhdhins took it in turns to call the adhān.

3. Since the Khalīfa who gave this order was at that time resident in Damascus which was his capital, it is extremely likely that he would have had this in mind.

5. There are two staircase minarets in Nalūt in the Jabal Nafūsa, having a simple ouside staircase built of mud-brick, the actual place from which the adhān was given being a tripod-shaped cupola, approximately two metres high, each leg of the tripod being formed of baked brick with a mud-plaster covering.

6. These forms will be discussed in detail later in this chapter.

7. Presumably this may have had something to do with the complications involved with four mu'adhdhins as mentioned in Note 4 supra. After the initial Umayyad movement connected with the Great Mosque of Damascus, four minarets would also tend to be associated with the Umayyad Khalifate and not therefore a tradition to be followed by the'Abbāssids.

8. Four minaretsare quite commonly found in Ottoman mosques although since the Ottoman world was mediaeval in its obedience to order and precedence, in architecture as in everything else, only a royal mosque might have more than one minaret (Goodwin 1971:10). The number of mosques having four or more minarets is therefore an indication of the number of royal foundations.

9. 'Uqba b. Nāfi'b. 'Abd Qais al-Qurashī al-Fihrī was a nephew of 'Amr b. al-'Ās who, shortly before his death in 42/663 gave him the command in Ifrīqiya. After several campaigns which led as far as the Straits of Gibraltar but not across, he was killed in battle with the Berbers in 63/683. His foundation of Qayrawān was important but his main advance was without real foundation since it was not followed by occupation (Levi Provencal E.I.). There are many legends concerned with his foundation of Qayrawān and the establishment of the miḥrāb of the Great Mosque.

10. When Ziyādat Allāh destroyed the previous mosque he did not wish that his new foundation should have any traces of the previous

mosques. However it was pointed out to him that the miḥrāb had been constructed by 'Uqba ibn Nāfi' and that all his predecessors had respected that part of the building. Eventually, since Ziyādat Allāh persisted in his resolution, the miḥrāb was enclosed within two walls. Since the recent excavations it would seem that he also left the minaret, although slightly altering it.

11. I was fortunate to have the chance of visiting the mosque in the summer of 1968 at the time when extensive restorations of the entire structure were being carried out under the direction of the Italian architect Dr Paulo Donati, and was shown around the site by Dr Donati.

12. This is exactly the same in design as those of the nearby standing cisterns at Raqqāda, that is to say rectangular with circular corner buttresses and semi-circular buttresses in the centre of each wall. Unfortunately only the southern face of the base of the minaret and the cistern underneath had been uncovered at the time of my visit, and I was unable to examine these too closely or to photograph them because of difficulties with the Tunisian Archaeologist who was in charge of this work.

13. It is to be regretted that an extension to these excavations was not made along the eastern and western faces of the base within the mosque enclosure, since this would have helped to clear up a further discrepancy between the al-Bakrī description and the existing structure. Al-Bakrī mentions two doors to the minaret, one on the eastern and one on the western face. There is only one entrance at present, that on the southern face, and it is the

style of this entrance which has been one of the reasons for the attribution of the minaret to the Ziyādat Allāh reconstruction. This could however easily be accounted for by the raising of the floor at the time of the reconstruction. The consequent loss of the two side entrances, and their replacement by a single one would fit the reconstruction, and the new entrance would naturally be in the style of the period.

14. These recent excavations also helped to clear up certain other problems about this mosque, notably that of the lost miḥrāb of 'Uqba. At the time of the Ziyādat Allāh reconstruction the entire floor level of the mosque was raised, and therefore instead of trying to see the original miḥrāb behind the present one, it must be sought below the present floor level. As a further clue to the exact whereabouts of the miḥrāb another cistern was found within the precincts of the present sanctuary area, but presumably within the area of the earliest courtyard. This lay somewhat to the west of the central nave indicating that the original mosque was probably not as wide as the present one, and that therefore the original miḥrāb should be sought not merely below but slightly to the west of the present miḥrāb.

Unfortunately I was not present when the centre part of the qibla wall was excavated and therefore did not see the miḥrab site, and on subsequent visits to Qayrawān I have not been able to discover anything about the excavations at all, nor has anything been published so far.

15. 'Abd al-Raḥmān I, called al-Dākhil, the 'Immigrant', was the

son of Mu'āwiya b. Hishām and was born in 113/731. He managed to escape the 'Abbāsid persecution of the Umayyads, and after various adventures in North Africa, moved on to Spain, and by 138/756 he had been proclaimed amīr of al-Andalus where he ruled for a further 33 years. This acted as a focal point for the political allies and supporters of the Umayyads who were soon fleeing in great numbers to Spain. As a result of this large immigration of people from Syria there was a direct Syrian influence on art and architecture which was that much stronger being that much more direct (Levi Provencal E.I.).

16. The minaret of the Great Mosque of Sfax was originally built in 235/849 a few years after the rebuilding of the Qayrawān mosque (Lezine 1966:117-22). The essential form of this minaret is very similar to that of Qayrawān, although the present decoration is the result of extensive restructuring in 378/988 and 478/1085 under the Zīrīds.

17. The Khalaf tower was built in 245/859 at the same time as the ramparts of Sousse, and replaced the tower of the Ribāṭ as the chief vantage point of the city (Lezine Sousse n.d.:41-3).

18. The Ribāṭ of Monastir was built by Harthama ibn 'Ayān in 180/796. The tower is a cylindrical watch tower on a solid square base which formed the corner tower of the original Ribāṭ, now enclosed within the much larger fortress built at a later date (Lezine 1966: 122-6).

19. The Ribāṭ of Sousse was built prior to that of Monastir, but

was only adorned with a watch-tower in the reign of Ziyādat Allāh I in 206/821. This is attested by an inscription on a marble plaque set in the wall of the tower (Lezine Sousse:21-32).

20. There are however mosques in both Ribāṭs, as would be expected from the character of the building, and it is possible that the towers could also have served the function of mi'dhana as well. There main function however was undeniably that of manāra.

21. As far as can be ascertained the local lighthouse tradition probably derived from the existence of a number of Byzantine light-houses which continued to exist in the area, similar to that built at the harbour of Leptis Magna. There is however no indication that any of these had solid bases, and the origin for this is probably to be sought in the form of the staircase minaret already discussed, with some form of tower or cupola placed on a strengthened bastion.

22. The results of these excavations have been written to be published in Libya Antiqua (Blake, Hutt and Whitehouse), but at the time of writing this thesis the article has not yet appeared although it was written in 1971. In addition to the excavation results, the study of old photographs has revealed the shape here described. The existence of the octagonal upper section has been confirmed by the discovery of a section of inscription, angled to form part of an octagon.

23. The minaret of the Mosque of Harput in Turkey was built in 562/1166, and is therefore considerably later than all the examples

cited so far, however it is a unique example of this type which still exists. The lower section is stone, a solid square base, with an outside staircase, above which rises the square brick shaft with an internal staircase. This becomes a cylindrical shaft by the use of squinches, the only example I know of a minaret with this internal structure. Externally this is represented by an octagonal zone. I know of no other minaret anywhere which has this incredible structure.

24. After the conquest of Ifrīqiya in 297/909 'Ubaid Allāh began preparations for the conquest of Egypt and was able to send the first expedition in 301/913-4 under the command of his young son Abū al-Qāsim, and a second in 308/920. Both of these were initially successful but were eventually forced to retreat because of an over-extended line of communications, hence the need to establish bases for the army nearer to Egypt. Al-Bakrī states that both Tripoli and Ajdābiyah were founded by Abū al-Qāsim, although excavations have revealed an earlier occupation level in the latter. Certainly they were strengthened by Abū al-Qāsim, who presumably also did something for Madīna Sulṭān since this was an important half-way stopping place on the Gulf of Sirte.

25. As in the case of Ajdābiyah, this form for the shaft of the minaret has been suggested by a similar piece of inscription, shaped to fit an octagonal section.

26. The Normans of Sicily under Roger II finally conquered Mahdīya in 1148 after which it was the centre of the Sicilian African empire until its collapse under William I in 1160 when it was retaken by the Almohads.

27. The first foundation of Fez was by Idrīs I, the 'Alīd who had fled from the 'Abbāsids to the west and there founded a Berber kingdom. He was murdered by emissaries of Harūn al-Rashīd in 791-2, but succeeded by his posthumous son Idrīs II who in 809 refounded the city on the opposite bank of the river. There were thus two cities of Fez, and these received an influx of new inhabitants in 818 and 825 when several hundred families from Cordova and Qayrawān who had been forced into exile by the political vicissitudes of the time, settled there and brought their advanced techniques to the newly founded city (Julien 1970:38-41).

28. The Zīrid family of the Sanhāja berber confederation had been appointed Governors of Ifrīqiya by the departing Fāṭimids, and accordingly ruled central North Africa in the name of the Fāṭimid Khalīfas of Cairo. The Zenata Berbers were the more westerly confederation of tribes ruling in Morocco. They received support from the Umayyads in Spain, and after 'Abd al-Raḥmān III proclaimed himself Khalīfa in 929, his name was recited in the khutba in the whole western Maghrib (Julien 1970:64-70).

29. The Qal'a of the Banī Ḥammād was founded in 1008-9 by Ḥammād, uncle of the ruling Zīrid amīr Bādis as a semi-independent Sanhāja state. It swiftly became a centre of learning and art, looking to Cairo and Baghdad for inspiration, but often retaining a provincial look. The city was finally abandoned to the Banī Hilāl in 1090, the Ḥammādids retreating to another capital Bougie on the coast almost due north of the Qal'a.

30. This idea first appeared in the palace of Zīri at Achīr

(Golvin 1966:fig. 5), whence it spread to the rest of North Africa and also to Spain and Sicily: Cordova 965; Cristo de la Luz, Toledo, 999; the Qal'a, early eleventh century; and Norman Palermo in the twelfth century.

31. It was this synthesis of Umayyad and North African forms therefore which produced the Giralda tower in Seville, the Kutubiya of Marrakesh, and the Ḥasan tower of Rabāṭ, from which all subsequent Maghribī minarets trace their descent.

32. Thiersch has suggested certain Chinese towers as possible alternatives, but the towers he cites are those of the eleventh to thirteenth centuries, and although the Chinese influence was important in Central Asia, as will be shown in the Chapter on the Origins of the Iranian form of the Minaret, I do not think that this influence would have been of importance at this date.

33. One aspect of the Sāmarrā minarets which may have had an influence on the subsequent development of the Iranian minarets is the fact that they are free-standing, but this may be more of a coincidence than an influence, and would only have served to re-inforce the Central Asian tendency which will be discussed later.

34. As a result of recent investigations in Libya, I would suggest that one of the two corner towers at Mahdīya served as a minaret, with an external staircase concealed within the arcade. I suggested this idea to Lezine, who has clearly demonstrated that the lower section of each tower was used as a cistern (Lezine 1965:95-7), and although he said that he had found no trace of any staircase during his excavations, he did not discount the possibility, and suggested

that this might be a fruitful field for investigation into the various literary sources. Certainly the similarity with Madīna Sulṭān must be emphasised. All this group of mosques fall within the same period and certainly influenced mosque structure in Cairo after the Fāṭimids finally conquered Egypt in 358/969.

## Chapter III. Early Minarets in Iran.

When one considers the richness and diversity of the subsequent monuments in Iran, and the considerable role which Iranian design and inspiration played in the development of Islamic art and architecture, the paucity of the remains from the first three centuries of the Hijra is all the more surprising. This situation will undoubtedly be somewhat rectified by current and contemplated archaeological campaigns, but at present there are a number of significant gaps, not least in our knowledge of the early Iranian minaret. Aslanapa (1971:49) has suggested that many of the Khurasanian minarets, particularly those of the Sāmānids, were constructed of wood, which would account for their disappearance, and others constructed in mud-brick may have vanished (Note 1), but given the amply demonstrated Iranian genius for construction in stone and fired brick under the Sasanians more remains from this period might have been expected.

When one considers the actual state of the Sasanian monuments however, the almost total absence of tower constructions is most striking. Neither the Zendān-i Sulaimān at Pasargadae nor the Ka'bah-i Zardusht at Naqsh-i Rustam can be described as towers, and although a number of the Chahār Tāqs are of considerable height they would not be described as towers either. In Iran there is therefore only one major structure which can be so described, the so-called Minār of Gūr in the centre of the ruins of Fīrūzābād. Herzfeld's reconstruction of this, quoted in Pope (1964-5:567), is of a rectangular tower containing a vaulted inner ramp winding around a central core. The ruins of this tower stand 25m. high,

and some 10m. square, and was made of rough-hewn stones joined with mortar. Two main theories for the use of this tower have been suggested, the first is that because it was beside the remains of the temple it was connected in some way with the Zoroastrian cult: that it was either a gigantic fire altar for certain specific occasions, or that it was a high place connected with the invocation of the stars (Note 2). The other suggestion is that it was a symbolic fortification, a visual expression of the king's power and authority (Pope 1964-5:567; Matheson 1972:252).

Because this tower is so unusual a feature in Sasanian times it is important to attempt to discover the origins of this idea. Unfortunately, although all authorities are agreed on dating it to Sasanian times, it is not possible at the present state of archaeological research to be more precise than this. If the tower dates from the foundation of the city by Ardashīr, the first Sasanian king, then some Parthian original should be sought; again the present state of research does not permit a definite answer to be made, but in so far as I have been able to examine the works so far published, I have been unable to trace any Parthian towers (Note 3). If the tower dates from later in the Sasanian period when the empire reached into Central Asia, then it would be possible to draw inspiration from the tradition of tower building in that area (discussed in Chapter V, the Origins of the Iranian Minaret Form). The Syrian church towers, already mentioned in Chapter II, do not appear before the fifth or sixth centuries, and it would seem that the tower of Gūr must date prior to this. Whatever the origin, and it would seem that in the present state of knowledge this must remain an unsolved question for the time being, it

appears that the tower of Gūr was a most unusual feature, and this very uniqueness tends to underline the fact that in early Iranian times under the Sasanians, Parthians, and Achaemenians there was no tradition of tower building.

It now remains to examine the number of minarets remaining or recorded for the early Islamic period prior to the eleventh century. In the list of monuments which Herzfeld has compiled from literary sources (1921:163-71) are a number of minarets. The first of the sources refers to two minarets built in Zaranj by Ya'qūb ibn al-Layth (Note 4) between 254/868 and 265/878. Interestingly enough both of these are referred to as manāra. Presumably these were built of mud-brick, although insufficient work at the site has ever been undertaken to enable any remains to be identified. The whole eastern region of Iran would repay detailed archaeological research (Note 5). The next reference is to Sīrjān. Between the years 338/949 and 372/982 there are references to the palace of Bāb Hakim and also to the mosque of 'Aḍud al-Dawla, which latter apparently had a high minaret referred to by both Muqaddasī and Yāqūt (Note 6). The next minaret is one of the Isfahan ones which is identified by Smith (1936:314) with that of the Mas id-i Jāmi' of Jurjīr, which he would date between 366/976 and 375/985. The mosque and minaret were apparently both built of sun-dried brick, and the minaret was famous among architects the world over for its height, beauty and decoration. According to Smith it towered 100 gaz, or 70 ells, but there is no other description of it to enable its type to be determined (Note 7).

An earlier minaret was apparently that of the Tārīk Khāna at Dāmghān

where traces of the remains of the base of a square minaret remained visible until recently alongside the later eleventh century minaret (Note 8). This was about 6.5m. square(Schroeder 1964-5:934) and was probably built of mud-brick. Schroeder also suggests (1964-5: 1026) that the Masjid-i Jāmi' at Shushtar has the remains of an 'Abbāsid minaret. He is apparently referring to the truncated stone shaft which flanks the main entrance on the opposit side to the early fifteenth century minaret (Note 9). The mosque was founded in the reign of the Khalīfa al-Mu'tazz Bi-llāh in 252/866, and it is possible that the minaret may date from this period, although the mosque was not finished until the reign of the Khalīfa al-Mustarshid, 512/1118 - 530/1135. Whatever the date of this minaret, we have here a multi-storeyed stone minaret which is certainly in the western Islamic tradition rather than the eastern, Iranian type, as one would expect in an area ruled from Baghdad.

Unfortunately, as I have already mentioned, very little has so far been done in the way of serious archaeological research into the various Islamic sites in Iran, Islamic archaeology being often regarded as a minor stage in the excavation of an earlier site. An example of this is the excavations at Susa where, although a rough plan of the mosque was made, no further work has been done on the extremely rich and important material from this site. A recent excavation of a small area of the site by Dr Ayalon has been instrumental in determining a pottery sequence for this early Islamic period, but the entire mosque area had already been destroyed in the previous excavations, so that further investigations are now impossible.

The earliest minaret remains so far found in Iran are those of the Great Mosque of Sīrāf. This has been dated by Whitehouse (1971:4) to the early ninth century. The minaret was essentially a solid square tower situated alongside the northeastern entrance to the mosque, having a square base 3.80m. square, with the remains of an external staircase leading to it, of which five steps remained. The staircase was situated within the mosque, rising directly from the arcade, and like the base and wall to which it was bonded, was built of stone rubble and mortar. No traces were found of any shaft remains such as those of Ajdābiyah, nor do any of the sources examined by Le Strange or Herzfeld apparently speak of any lofty minaret adjoining the mosque, a fairly normal occurrence should such a minaret have existed. This would therefore tend to suggest that the minaret merely rose to the height of the external walls, from which the adhān would have been given, although the possibility of an additional shaft must not be ruled out.

There is nothing in the remains of this minaret to indicate that it was used for anything other than the adhān, although the position of the Great Mosque in the centre of the town on the sea-shore might seem to indicate the possibility of its use as a manāra (Note 10).

There are two further minarets which should be mentioned at this point. I have not seen either of these, although both have been published, and I must therefore rely on the evidence gathered by others. The first of these is a conico-cylindric minaret on a high square base with an external staircase leading to the door at the baseof the shaft. The shaft has an overhanging crown which

presumably formed a parapet for the mu'adhdhin (Afshar 1348:Pl.500, pp.122-3). The whole complex, mosque and minaret, is built of mud-brick, and is situated in the small village of 'Izābād near Yazd. Afshar makes no attempt to give a date for this minaret, but it is very similar to that of Fahraj, which is also near Yazd.

The first mention of this monument is also by Afshar (1348:215), but the first complete description of the mosque and minaret of Fahraj is by Pirnia (1349:2-13). A more detailed plan has also been published by Galdieri (1973:fig. 2c), but according to Dr. Whitehouse who has visited the site, there is one major discrepancey in both plans so far published in that they both show the minaret as being actually bonded into the contiguous wall, whereas Dr. Whitehouse informs me that the minaret is free-standing. According to Whitehouse, the door leading to the minaret is undoubtedly contemporary with the rest of the mosque (Note 11), but the minaret is free-standing, and is not bonded into the wall in any way. Whitehouse also states that the staircase of the minaret revolves upon itself, as do those of Simnān and 'Alā (catalogue 5 and 16), that is without a central column, the steps being corbelled out from the wall, overlapping each other at the centre. Both published plans show a central column.

Afshar makes no mention of a date, but on the general resemblance of the stucco to that of the mosque of Ibn Ṭūlūn in Cairo, and the ovoid, Sasano-type arches, Pirnia would suggest a date in the ninth century for the mosque, with which Galdieri agrees, placing it between the eighth and tenth. Pirnia however would suggest that the minaret is somewhat later, between the tenth and eleventh centuries.

Accepting the fact that the minaret is free-standing, and this fact

must be corroborated by Pirnia's suggestion that the minaret is of a later date, and taking into account the internal staircase arrangements, I would tend to suggest a date towards the end of the tenth century, possibly the beginning of the elventh. Given its general similarity I would associate the minaret of 'Izābād with that of Fahraj, and link them both with that of Nāyīn,q.v., placing all three of them pre-Saljuq (Note 12).

Of the minarets discussed so far, two had square bases, those of the Tārīk Khāna and the Great Mosque of Sīrāf, while that of Shushtar had a rectangular base with octagonal and cylindrical upper stories. For those mentioned by Herzfeld we have no idea as to what shape they had, not even the bases, while the two mud-brick minarets of 'Izābād and Fahraj are as yet impossible to date exactly and, although of considerable interest, do not really form part of the general pattern of Iranian minarets. Schroeder (1964-5:1026) concludes that the early Iranian minarets were square, at least in their lower stories, an opinion with which Diez apparently concurs (1964-5:928-9), and with which I find it difficult to disagree. The one fact which however is most striking is the paucity of the evidence, the very few remaining minarets from the first 300 years of the Hijra.

In my opinion the oldest standing minaret in Iran is that of the Masjid-i Jāmi' at Nāyīn (Catalogue 1), which would appear to date from the latter half of the tenth century, although I will enter a caveat at this point and say the oldest standing baked-brick minaret, since the mud-brick minarets may be discovered to be earlier. The Nāyīn minaret also falls within the above cited category, that is having a square base, which in this case is topped by a tapering

octagonal shaft, which in turn terminates in a cylindrical shaft which supports the balcony (Note 13).

Thus the Iranian minarets until the end of the tenth century, whilst not necessarily being of the Syrian square tower variety, so nothing to suggest the later cylindrical or conico-cylindrical type which was to become almost standard for the Iranian minarets. This is a further reason why I tend to be doubtful of the early date attributed to the Masjid-i Jāmi' of Nayrīz. I have included it in the catalogue as a tenth century minaret because of Schroeder's definite dating (1964-5:939), but there is something about the lower section (catalogue 2) which particularly disturbs me for this early date. Should it belong to the tenth century it would also be the first cylindrical baked brick minaret in Iran to survive, and Nayrīz seems a somewhat unlikely place for such an important evolution to have taken place (Note 14).

Diez (1964-5:928) has succinctly summarised the essential difference between eastern and western minarets by referring to the design in terms of interior space. The western minaret is built as a tower having interior space which was designed to be used, and the fabric has windows to enable this space to be used, hence Creswell's suggestion that this space could have been used as a 'hermitage', sawma'a. I have already discussed this particular use of the word sawma'a in an earlier chapter, but even the possibility of this use is basically inconceivable for the Iranian type of minaret, although I would not altogether concur with Diez' second remark that the eastern minaret is purely and simply a monument. However, such interior space as there is has a purely functional character; it is a practical way of ascent.

This particular form of minaret would appear to have an eastern origin, immediately deriving from Central Asia, which I will discuss in Chapter V. The first appearance of this form, as I have suggested earlier must therefore be linked with the advent of the Central Asian Turks as rulers, that is with the Ghaznavids, and the first example from this period is the minaret of Sangbast (Note 15).

The minaret of Sangbast (catalogue 3) is associated with Arslān Jādhib, Valī of Ṭūs under Maḥmūd of Ghaznī, who died in 419/1028 (Schroeder 1964-5:986-8) (Note 16). I feel that it is significant that this minaret, and the next five in my catalogue list, should all be of the simple cylindrical type; the sixth, Damāvand, only deviates in having a square base, after which the next four are also cylindrical, although that of Zarand has flanges in addition (Note 17).

Thus prior to the eleventh century, the few minarets which can be traced in Iran formed a somewhat heterogenous collection, owing their origins as much to the earlier development of the minaret in western Islam as to any possible local factor. The only complete example in baked brick which definitely comes from this period, that of Nāyīn, does however, already begin to show the native Iranian genius for brickwork, the origins of which will be discussed in Chapter VII dealing with Decoration, although this is in a very primitive form compared to the richness and elaboration which was about to appear.

At the beginning of the eleventh century, under the influence of the Central Asian Turks, not merely do these new forms appear in the northeast and spread throughout the country, but within this short

period of only two-hundred years a considerable number of these minarets appear of which some forty remain to us nowadays. This has to be contrasted with the situation which had preceded it, not only in the early Islamic period, but also in the pre-Islamic times when Iran was a country which did not have a tower tradition. The reasons for this spread, and the traditions behind it will be discussed in Chapter VI dealing with the Spread of the Iranian form of the minaret.

## Chapter III. Notes.

1. In addition to the minarets mentioned later in this chapter as of mud-brick there is a minaret in Yazd, known as the Manār-i Gèl, the minaret of mud. It is a semi-ruined structure which has no other structures around it, and of uncertain age, but may represent a rare survivor from a pre-tenth or eleventh century period. It has no noticeable features which would make it of interest to the development of the minaret as a structure. The mud-brick towers of Zarand, which do continue the tradition of Iranian brickwork and are ornamented with a number of designs, date mainly from the eighteenth and nineteenth centuries according to my local informants.

2. The showing of the sacred fire in such a public manner would not be in accordance with common Zoroastrian practise nowadays, but may have occurred when it could be assumed that the entire city was composed of co-religionists.

3. I have checked in Pope's Survey, 1964-5; Godard's 'Art of Iran'; and Erdmann's 'Die Kunst Irans Zur Zeit der Sasaniden', Berlin 1943. In addition I have spoken to Mr. David Stronach and also Dr. Georgina Herrman, neither of whom were able to give any further information on towers during this period.

4. See Note 2 in the Introduction supra.

5. I have visited the area on a number of occasions, and have been able to identify the remains of the Mīl-i Kasīmābād (Catalogue 43),

but very little work has so far been done on any of the Islamic remains there, although this would link in extremely well with the work currently being done by Dr. Klaus Fischer in Afghan Sistan.

6. At the time of the 1970 excavations ar Sīrjān (Williamson 1971: 177) we investigated one of the largest structures visible, which had a considerable amount of very rich stucco. Unfortunately the entire mound had been badly pillaged shortly before our excavation, but one corner of the structure had a much larger mound than the remainder, which would have been consistent with the collapse of a tower. We did not have a sufficiently long season to investigate this building thoroughly, and it would have required a complete excavation to draw any conclusions about the form of the minaret, if such it be. All I can say at this point is that it was of baked brick.

7. I understand from a private communication from Dr. Whitehouse that recent excavation by the Italians has revealed the existence of a mosque near the Shahristan bridge which is apparently larger than the Isfahan Masjid-i Jāmi'. This mosque may well furnish details of earlier minaret construction, but we must await the publication of the results.

8. I have not been able to detect these traces on recent visits to the site, and must therefore assume that they have been removed during renovations.

9. The lowest visible section of this tower is a great rectangular base which protrudes from the mosque facade. This lowest section

is 3 42m. wide and juts 2.90m. from the facade on the side of the door and 1.05m. on the other side. The rectangular base is 1.64m. high, above which is an octagonal section 1.27m. high, from which the remains of the cylindrical shaft rise in two stages for a further 5.57m. The whole is crowned by a small octagonal kiosk in brick and faience which is obviously of much later date, and probably is contemporary with the construction of the early fifteenth century minaret and the portal itself.

10. There is, however, an interesting site on a spit of land to the north of the town which Whitehouse (1972:76-8,fig.9) has suggested as a possible Customs warehouse. This does contain the foundations for something which might conceivably be either an elevated chamber, perhaps used as a mosque as in the great Anatolian Caravanserais, or possibly serving as the base for some sort of beacon. If this were to have been the case it would have been an interesting seperation of function between mi'dhana and manāra.

11. The interior of the mosque has a considerable amount of stucco design which is very remeniscent of that of Ibn Ṭūlūn, and this same design is continued in the panel which surrounds the door leading to the minaret, thus indicating that at least the door was contemporary with the remainder of the mosque. This does not however mean that the present minaret is also contemporary, the evidence generally pointing away from any form of cylindrical minaret at this time.

12. It is however extremely difficult to date mud-brick structures in any definitive fashion unless there is other evidence in the form of pottery or inscriptions. There is however, a fine eleventh century tombstone in the mosque, in the same series as those already published

by Afshar (1348: figs. 489,491,494,526-9,533, etc..), which certainly lends support to the idea of a further period of building activity at that time.

13. It has been suggested that the recently destroyed minaret at Samirān, illustrated by Willey (1963:facing 96), might have been built prior to the eleventh century. Willey's description (1963: 94) is meagre, but from his photographs it would appear that the minaret had a brick or rubble core and some sort of stone revetment. It had a square base with a cylindrical shaft, the whole about 9m. high, and containing a double spiral staircase with a most interesting vaulted roofing system, apparently a series of pointed arched squinches (Willeys photograph has unfortunately been reproduced upside down, which does not help with the study of the monument). It was not free-standing, but was attached to a building by meñas of a wall which sprang from one side of the square base. In my opinion this is almost certainly not of such an early date, although the nearby tomb-towers are apparently of Būyid date. I would suggest that it might well date from the twelfth century, and may even be subsequent to the destruction of the site by the Mongols under Hulagu.

14. Nayrīz is situated on the caravan route between Shiraz and Sīrjān, and was obviously a most important caravan rest point, judging by the number of caravanserai remains there, however it is in the centre of Fārs, and its conservatism is demonstrated by the form of the mosque itself which is a simple <u>īwān</u> , although this would not be taken as any positive proof. The argument I have outlined in the catalogue however concerning the late form of the arches in the lower section of the minaret is the one which I think must carry the most weight.

15. It might be suggested that the appearance of the minarets of 'Izābād and Fahraj as well as that of Nāyīn ante-date the arrival of the Central Asian Turks. It is however interesting that all three are in the same region, and the mosque at Fahraj shows considerable non-Iranian features. I would therefore suggest that in fact these minarets represent a non-Iranian presence, very possibly a Turkish one since, as has already been remarked, the Turks were already in evidence in Mesopotamia, and the Tulunid mosque which that of Fahraj resembles, was built by a Turk, Ibn Ṭūlūn.

16. Rogers (1973:225 n.28) refers to the article by Van Berchem in Diez, Churasanische Baudenkmäler (Berlin, 1918) p. 55, in which he suggests that, if the inscription has been read correctly, the titles al-malik al'ādil, combined with the style of lettering of the inscription, would give a date at the end of the twelfth century if not later. Rogers accepts this dating for the tomb, as opposed to linking it with the tomb of Arslān Jādhib, however, as will be apparent in Chapter VIII on Decoration, from an architectural point of view I would contest this later twelfth century dating. The importance of the exterioraisation of the squinch must be underlined, as must Van berchem's hesitation in making a definite decision. Certainly the minaret would agree with this early date from a decorative point of veiw, and I think that the case is not yet proven for moving the date of the tomb to the end of the twelfth century.

17. The flanges of the minaret of Zarand are essentially additions to the basic cylindrical structure, as opposed to the flanges of the Quṭb Minār in Delhi which form an integral part of the structure. The two, Zarand and the Quṭb, are nonetheless linked, as will be shown in the Chapter on the Iranian form of the minaret.

## Chapter IV. Different Types of Iranian Minaret.

After the beginning of the eleventh century and the advent of the Central Asian Turks, the Iranian minarets can be divided into a very few major types: those with octagonal bases; those with square bases; and those in the form of a simple cylinder. Obviously this is an over-simplification, and there are a number of variations, but broadly speaking, most fall within these categories.

Perhaps the most significant difference from the point of view of form is the distinction between cylindrical and conico-cylindrical. Of the group of Iranian minarets being studied in this thesis, those which have an octagonal base, of which there are nine remaining, have in the majority of cases, that is six to three, simple cylindrical shafts as opposed to conico-cylindrical. This is an unusual proportion since the majority of minarets in Iran tend to be conico-cylindrical. Of the minarets with square bases, all have tapering shafts, with the single exception of the tower of Khurramābād which, in any case, is in a category of its own. Of the twenty-five minarets which are basically cylindrical without any differentiated base, only eight are straight-sided cylinders, whereas all the remainder are tapered.

It might well be argued that this is merely a matter of building technique, that some form of taper lends solidity to the structure, and that the Iranian bricklayers were not capable of building with sufficient stability to the height required without a taper. Although the majority of simple cylindrical minarets are not among the highest in Iran, in the case of Gulpāyagān this argument falls down. Nor is there any limitation of date in this respect, since both types of

shaft are found throughout the period under discussion. From the decorative aspect also this diminution in the shaft tended to increase the basic difficulties with regard to pattern, and in the case of certain shafts with an all-over single pattern, as is the case with the minaret of Sīn, this required considerable adjustment between the design size, the pattern module, at the bottom and the top of the shaft.

As far as can be judged the decision to have a cylindrical or a conico-cylindrical minaret appears to have been taken for purely aesthetic reasons, and should in no way be taken as a reflection on the skill of the bricklayers. Interestingly enough none of the Iranian minarets display the extreme taper which is such a noticeable feature of two of the Central Asian minarets, those of Uzgand and Bukhārā (Note 1), where the taper is considerably exaggerated. This would appear to have been a completely seperate form, or at least a distinct regional style which does not appear in Iran, despite the considerable influence exercised by Central Asian styles on Iranian designs, particularly the minaret design (Note 2).

A further important distinction is whether or not the minarets are, or were originally free-standing, or whether they were always attached to the main mosque fabric. As far as can be judged, and of course this is not always possible without controlled excavations, the vast majority of the eleventh and twelfth century minarets were originally free-standing, although of these the majority have at some subsequent stage been attached to the main mosque building. Of the forty minarets which form the subject of this thesis, only eight were definitely attached to the adjacent mosque building from

the beginning, and two of these, the twin minarets of Ṭabas and the remaining one from the Masjid-i Imām Ḥasan at Ardistān, were minarets crowning a portal. There are a further eleven minarets which only excavation can definitely assign to one or other category, but of these, as far as I am able to judge, the probability is that most if not all were originally free-standing.

It is of course possible that the minaret, and also possibly the mihrāb chamber, were originally the only parts of the mosque which would have been built in baked-brick, and that they would always have been linked by some form of mud-brick wall. An example of where this may have been the case is in the Masjid-i Jāmi' in Kāshān, where the mosque is situated on a slight mound, while the minaret has its base at ground level, but was always entered from the level of the mosque courtyard (catalogue 12). It would therefore seem to have been the general rule that the minaret was built free-standing, but in close association with the mosque. As Schroeder has pointed out (1964-5:1029), it was usually situated at or near the northern corner of the mosque, although there are a number of exceptions to this rule, such as the Masjid-i Jāmi' at Kāshān, where the exigencies of the terrain demanded that the minaret be on the east side (Note 3).

The appearance or not of a balcony, particularly when considered with the question of the height of the minaret, is of considerable liturgical importance. As I have already mentioned, Diez (1964-5: 928) has suggested that the Iranian minaret was purely commemorative therefore almost never used for the adhān. However, of the minarets under discussion, I have only been able to find nine which are not directly associated with a mosque or some similar religious building

although in the case of the Ṭabas Madrasa and the Masjid-i Imām Ḥasan at Ardistān I would doubt that the adhān would have been given from the minarets. Since this is an extremely important point I propose to discuss it in detail.

The earliest of these towers which has no mosque or religious building associated with it is the Mīl-i Naḍerī (catalogue 11), which I have listed in the catalogue as a watch-light tower, and which was built as such, as we know from literary sources (Bosworth 1968:86). The second is that of Kirāt, and in the catalogue (14) I have tried to argue that despite the absence of any visible mosque ruins, the presence of a balcony indicates that in all probability it was used for the adhān. It would seem less likely that the tower of Khusrawgird (catalogue 22), the third example, was ever used for the adhān since there is no trace of any balcony and it would have been too high to have been used satisfactorily if the adhān had been given from the summit. Again, for the tower of Fīrūzābād (catalogue 28) I have suggested that it was used as a signal tower rather than a mi'dhana, although its modest height would not have precluded this use. The Sarabān tower in Isfahan (catalogue 37) is free-standing, and there are no traces of a mosque in association with it, although the fact that the minaret is entered at a point ca. seven metres up the shaft, presumably via a bridge from some other building now disappeared, argues for its having been built in association with some such building. The balcony is set high, but this would not necessarily preclude its use as a mi'dhana, and its position in the centre of Isfahan, surrounded with other minarets and towers suggests rather a use as mi'dhana than manāra. The Manār-i Zayn al-Dīn in Kāshān however falls within a different

category in that there has never been any trace of any balcony as far as I have been able to check with local informants, its height, before the top was recently removed, would have precluded the adhān, and originally its situation must have been much closer to the edge of the town. It would therefore have been in an excellent position to act as a manāra to guide travellers into the town (catalogue 38). The great minaret of Zīār (catalogue 39), although being the tallest in Iran, has a balcony at a convenient height, and would almost certainly have been used for the adhān, a supposition which is further strengthened by the mud-brick mosque ruins noted at its base, although I would suggest that it also served the function of manāra like many others. Rahravān (catalogue 40), while not exactly small, is still not so tall as to preclude being used for the adhān, although so far no traces of any adjacent buildings have been found with which the minaret could have been associated, however I would argue from its situation somewhat off any major route, that it is more likely to have served as a mi'dhana than purely as a manāra. The last in this particular group, the tower of Khurramābād (catalogue 41), I have also suggested in the catalogue might well have been used as a mi'dhana despite its severely functional appearance, because of the door which marks the emplacement of a balcony.

Thus of the nine minarets which I have listed in detail in this group, all apparently having no direct contact with any mosque or religious building, I would suggest that only four would in all probability have performed solely as manāra, while all the others at least had the possibility of serving as mi'dhana. While this does not directly refute Diez' suggestion in that it is almost impossible to have irrefutable proof of the uses to which minarets

have been put, it at least widens the possibilities.

Of those minarets which are directly associated with a mosque or religious building at the present time, there are also some which in all probability would not have been used as mi'dhana, mainly on account of their height (e.g. the minaret of 'Alī in Isfahan, although the same remarks apply to this minaret as to that of Sarabān just mentioned), but the majority either obviated this difficulty by having a balcony at the correct, or at least a more reasonable height, or they were not too tall that they could not have served the purpose of the adhān.

During the eleventh and twelfth centuries, I would therefore suggest, the Iranian minarets, although having the function of commemorative column which Diez suggests, and which I will demonstrate in the Chapter on the Origins of the Iranian minaret, also served as guide-points and watch-towers in the majority of cases, and were also, although not invariably used for the adhān (Note 4).

Before proceeding to discuss the various types of base, and the sometimes complicated forms which were grafted onto the simple originals, it is perhaps worthwhile discussing the various forms of staircase. First it should be noted that the external staircase, that is the staircase minaret form, entirely disappears at this point. Earlier, as remains from Sīrāf have shown (Whitehouse 1971: 2), this form did exist in Iran, although no traces have been found so far during the, admittedly limited, number of excavations which have taken place on the plateau. In a more recent article, Whitehouse (1972:155-8) has pointed out that although the form

appeared in its original state in Iran in ninth century Siraf, it may have entirely disappeared as a form until the fifteenth century, at least on the Iranian shore of the Persian Gulf. Against this statement must be set the extreme lack of evidence with which any Islamic archaeological argument is faced, so that this statement could be reversed by later evidence. The other point in so far as the statement that the staircase form appeared in Iran is concerned, is that the Persian Gulf is a very distinct entity and should not necessarily be equated with any events on the plateau where so far there is no evidence at all for the existence of this type of minaret (Note 5).

The normal form of staircase in the Iranian minaret, certainly of the eleventh and twelfth centuries, is a spiral, revolving in an anti-clockwise direction around a central column. There is only one example to my knowledge of an interesting deviation from this type, and that is the Mīl-i Kasīmābād (catalogue 43), where, according to Tate (1909:177 and 228), the central column only continued for a height of three metres from the ground level, after which the staircase apparently revolved around itself as in the following examples. Since at the time Tate saw this minaret it was already in a somewhat ruinous condition, particularly the interior, and since it has now completely collapsed, I have permitted myself to express doubts as to the validity of this description, although I am prepared to accept that it might be a unique example.

There are a few examples of the spiral staircase without a central column in Iran, notably the minaret of Simnān and the nearby one of 'Alā (catalogue 5and 16), to which must be added according to

the description furnished me by Whitehouse in a personal communication, the minaret of Fahraj as mentioned in the previous chapter. In these examples the staircase is supported solely by the external walls, without any central support. The treads in each of the examples I have seen are slightly longer than the radius of the minaret interior so that there is no central cavity in which a column might fit, but the central core gap is eccentric and not visible for more than one or two circuits at any one point. This form of staircase was not confined to the Iranian plateau since I have located a similar staircase in the minaret alongside the Aksebe Türbesi, a small mosque - mausoleum at Alanya on the southern Turkish coast.

Double spiral staircases exist extremely rarely in Iran, and I know of only four examples from this period. It is however interesting to note that they are spread right across the time spectrum, the first being that of the Masjid-i Maydān at Sāva (catalogue 7), dated 453/1061-2; the second that of Gulpāyagān (catalogue 19), dating to approximately 1100; the third that of Gār (catalogue 24), 515/1121-2; and the fourth Khurānaq (catalogue 32), which I have placed in the last half of the twelfth century. Unfortunately I was only able to plan the minarets of Gulpäyagān and Gār (figs 11 and 12). This form of staircase is of course continued, an important example being that of the great minaret of Jām in central Afghanistan, dated to approximately 1185, while in later Ottoman minarets which had two or three balconies, the interior was so planned that seperate stairs led to each balcony (Note 6).

Of the base forms it is only the various octagonal bases which are of considerable interest (Note 7), although one other form which

derives from the cylindrical base which will be discussed at length. Schroeder (1964-5:1027) states that the octagonal form disappeared from Iran, the only example that he quotes being that of Kirāt, apart from mentioning some cases of octagonal socles of inconsiderable height. He does mention that the form continued in the west, particularly the great octagonal minaret of Bālis, Mesopotamia, built 590/1193 - 615/1218 (Note 8). My list has nine examples of octagonal bases, and while some of them may be described as being of inconsiderable height, in three of them it plays an important role in the decorative scheme (Note 9). These also span the entire period with which this thesis is concerned.

In the Masjid-i Shaiya, Isfahan (catalogue 26), there is a very high octagonal base which is essentially undecorated, while in Ardabil (catalogue 15), Gār (catalogue 24), the Masjid-i Jāmi' at Zavāra (catalogue 29), and Zīār (catalogue 39), the base is low in relation to the height of the minaret, and basically undecorated, although the minaret of Gār has an inscription around the top of the octagonal base, and two faces of the octagon have a diaper of rectangular Kufic (Note 10). I have included the Chihil Duktarān minaret in Isfahan among the octagonal bases, although it has been somewhat modified in shape by subsequent additions (catalogue 20). The three minarets in which the octagonal base forms an important aspect of the decoration are those of Kirāt, Varzana, and Gulpāyagān (catalogue 14, 18 and 19). Schroeder (1964-5:1027), apparently basing himself on his own analysis of the Kufic script and the brick decoration shown in a photograph of Diez (1918:Pl.XII), tends to place the Kirāt minaret in the first half of the eleventh century, and therefore prior to the Saljūq period, but I would tend to place it slightly later within the second half of the century for reasons

which I have outlined in the catalogue (Note 11). Certainly the brick patterns on the base are rich and varied and extremely important, but no more so than those of the Gulpāyagān minaret, which, although heavily restored, have a variety which is rare. Unfortunately the major part of the Varzana octagonal base is concealed within the walls of the later mosque, but this apparently also had a rich brickwork decoration (fig. 23).

There is one other form of base which I have so far not discussed at all, and which had a much wider range and variety than has hitherto been suspected. I am referring to the various forms of stellate base. Discussion on this form has so far been based on a miscalculation, that the second tower in Ghaznī belonged to the period of Sulṭān Mahmūd, and was therefore to be dated to the beginning of the eleventh century. It has now been conclusively proved by Sourdel-Thomine (1953:110-21) that this tower dates from the reign of Bahramshāh, 511/1117-8 - 543/1148-9. The other tower has been dated by inscription since its discovery to the reign of Mas'ūd III, 492/1098-9 - 508/1114-5 (Godard 1936:367-9). By removing the tower of Bahramshāh from the early eleventh century to the mid-twelfth, this enables a much more convincing decoration analysis to be performed, as will be apparent in Chapter VII on Decoration, it also removes an anomaly from the various forms of base construction and makes investigation into the origins of the stellate form more rewarding.

The earliest use which I know for such a base on a minaret is on that of the Masjid-i Jāmi' at Zarand (catalogue 10), which I would date pre-465/1073-4. Unfortunately, in so far as it has been

possible to plan the complete base by inference from that which is still visible, there is no regularity in the system which could lead on to the stellate bases of Ghazni (fig. 6). If joined by lines on the plan of the minaret, neither of the sets of flanges, neither the round nor the angular flanges, form a system approaching the eight-pointed star system of Ghaznī. Diez (1964-5:928) has suggested that the Ghaznī towers have a cosmological significance based on Vedic Cosmology brought back by Maḥmūd from India, and it is certainly conceivable that this stellate form based on two superimposed squares could be read this way. Unfortunately I have so far been unable to trace any Indian origin for this form, other than as a Mandala in a number of Tibetan Tangkas. The stellate flanges from Zarand do not appear to lead to this form, and I know of no other pre-Islamic towers in Iran which could do so, however there are a number of stellate towers in eastern Tibet which may well be the originals. As will be discussed in the next chapter on the Origins of the Iranian form of minaret, the influence of Tibet on Central Asia during the seventh, eighth, and ninth centuries was of great importance. These towers were first illustrated by Tafel (1914:Pl. LV and LVII) and subsequently by Rock (1930:393-7) and are eight-pointed flanged towers exactly as in Ghaznī. The ones in Minya Konka (Rock 1930) are approximately 18 or 19 metres high and must date prior to the middle of the ninth century before the collapse of the Tibetan empire (Note 12).

While the base of the minaret of Zarand probably did not lead on to the form of the Ghaznī minarets which , as noted above, probably had a more direct Central Asian origin, it is more than possible that, in combination with those of Ghaznī, it did lead on to further

developments. The recent discovery by Fischer (1970:91-107) of the remains of a minaret at Khwāja Siyāh Pusht in Afghan Sīstān, is of great interest as combining the regularity of the Ghaznī examples with the alternating round and stellate flanges of Zarand. This in turn leads on to the first great remaining minaret in India, that of the Quṭb Minār in Delhi, dated 1195 (Hutt 1970b:175)(Note 13). The Quṭb has exactly the form of the minaret of Khwāja Siyāh Pusht, which Fischer dates to the second half of the twelfth century on the evidence of pottery found at the site, and whereas in the Iranian example at Zarand the flanges only ornament the base, in the Afghan Sīstān example they continue to the existing height of the minaret, exactly as in the Quṭb.

A continuation of this form is also to be observed in Iran itself where the minaret of Nigār, dated 615/1217-8, has a base surrounded by a series of angular flanges (Hutt 1970b:177-80). This minaret will be discussed in the chapter on the End of the Saljūq Period. The Central Asian example, that of the minaret of Jar Kurgan, with its octagonal base and cluster of round shafts in two sections as described by Pope (1964-5:1027), must be counted in with this section. Pope dates it to the end of the eleventh or beginning of the twelfth century, and if this dating is correct, it would certainly have had an influence on this group of minarets (Note 14).

One other minaret in this series deserves recording, that of Nād 'Alī near Zaranj in Sīstān. Tate (1910:202) has described this minaret which has now apparently disappeared, and it appears to have been a unique amalgam between the octagonal base and the flanged. In this instance the round flanges are neither added to a circular

base, nor interspersed between the arms of a stellate one, but were attached to each face of an octagonal base. When Tate visited the area the minaret was approximately 8 - 9 metres high, and consisted of a lower section of some eight metres, at which point there were the remains of a balcony, above which rose the remains of a cylindrical shaft. The base was octagonal with a semi-circular buttress-flange attached to each face of the octagon and continuing for the entire height of the base. They probably also served as additional supports for the balcony, which was further supported by carved bricks fixed to the remaining flat face of the octagonal base. The decoration was of the simplest, consisting basically of three tiers of arrow-slit openings, three to each face of the octagon, the centre one falling in the middle of the round buttress. The uppermost series of arrow-slits was surmounted by two angled stretchers supported at the centre by a soldier. This may have served to take the weight off the arrow-slits, but I feel that it was probably only decorative. It would seem that the minaret dated from the end of the eleventh century. The uniqueness of this minaret is a witness to the inventiveness of the period; it was a time of experiment in which a number of ideas were attempted while using a comparatively limited number of basic formulas.

A last and most interesting minaret type which appeared at this time was that of the twin minarets associated with a portal. Schroeder (1936:136-9; 1964-5:987) has suggested that the minaret of Sangbast may be the remaining one of a pair which may have flanked a portal (catalogue 3), but, as he says, only excavation will determine this (Note 15). The first undoubted example of twin minarets sited on a portal is that of the Madrasa Daw Manār

at Ṭabas (catalogue 34). I have suggested that these minarets should be dated to the second half of the twelfth century, probably just within the Saljūq period, although these may represent the first wave of the new Central Asian style which, as I will outline in the chapter dealing with the end of the Saljūqs, I suggest supplanted the Saljūq examples while building on their achievements. Certainly it would seem that the other example which I have included, that of the Masjid-i Imām Ḥasan at Ardistān (catalogue 35) represents a considerable step forwards, particularly with its lavish use of colour. I would therefore tend to place it definitely after the Saljūq period as I would define it.

At the moment it is therefore not possible to state definitely that this form is a product of the Saljūq period. If the Sangbast minaret is one of a pair, this could be taken as pre-dating the Saljūqs, whereas it is possible that the earliest definite examples of this form, the Ṭabas minarets, could be post-Saljūq. The now disappeared pair at Nakhichivān cited by Schroeder( 1964-5:987 n.2) are almost certainly later than the Ṭabas minarets. All that can be said in the present state of knowledge is that they certainly formed one of the products of the eleventh/twelfth centuries.

The eleventh and twelfth centuries thus saw the appearance of a number of minaret forms, but the totality of these cannot be ascribed directly to Saljuq inspiration. The conico-cylindrical form was already there in Ghaznavid times in Sangbast, Simnān, and Dāmghān, and therefore also the two main forms of staircase, with and without a central column. These formed the basics of subsequent developments, but both the flanged and octagonal base forms were of

definite Saljūq inspiration, and partiuclarly the latter was developed as a major architectural and decorative element (Note 16). The idea was perhaps present in the second stage of the Nāyīn minaret (catalogue 1), but its first appearance dates to the minaret of Kirāt, where it is already a major element. Varzana and Gulpāyagān continue this trend, but others use it even in an undecorated form. Certainly it has a more aesthetically pleasing line as a base than the square form which makes the transition to the cylindrical shaft more abrupt. The minaret of Sīn (catalogue 25) even has a square base with an octagonal plinth before the cylindrical shaft, which I think tends to emphasise the aesthetic reasoning behind the form.

Chapter IV. Notes.

1. The great minaret of the Kalyān mosque in Bukhārā dateable to 1127 by an inscription with the name of the Qarakhānid Arslān shāh (Hill and Grabar 1964:50, figs 10 and 11) and a reference in al-Narshakhī, uses a number of brick patterns which appear in many of the Khurasanian minarets in particular which are mentioned in this thesis. The nearby minaret of Vabkent (Hill and Grabar 1964: 50, fig. 13) which is said to be a copy of this minaret is dated by an inscription to 595/1198-9. The minaret of Uzgand, illustrated in Cohn-Wiener's Turan (1930:Pl.X), is a very similar expression to those of Bukhārā and Vabkent, although nearer in date to that of Bukhārā. All three of these minarets have the exaggerated taper which is characteristic of this area and which continues until a much later period as shown by the minaret near the entrance of the Ulugh Beg madrasa in Ghujdawān (Hill and Grabar 1964: fig.125) which is dated to 1433. This form of extreme taper does not appear in Iran despite the apparent close connections which existed between the two areas.

2. In a so far unpublished paper, "Al-Madīnat ul-Fādilḥah" (The evolution from the pre-Islamic to the Islamic Turkish city between the ninth and the thirteenth centuries) Dr. Emel Esin refers to the minaret of Burana, which she also illustrates. This is very similar in form to those of Bukhārā, Vabkent, and Uzgand, being conico-cylindric on a low octagonal base, the shaft having the distinctive taper which characterises the Turkestan minarets. As far as I was able to judge from the photograph, the minaret was about 18m. high, of which approximately 3.50m. was occupied by the octagonal base. It is ornamented with bands of open fret brick designs set between

other bands which appear to have disintegrated. Apparently the town is called Burana as a deformation of manāra, the erection of which in the eleventh century symbolised its conversion to Islam.

3. One reason for building the minaret separately from the mosque is the purely practical one that if the minaret were to collapse it would do less damage to the mosque. Narshakhī (Aslanapa 1971: 49) refers to the collapse of the minaret of the Great Mosque of Bukhārā and its subsequent rebuilding at some distance from the mosque so that it should not damage it again were it to fall a second time.

4. The use of the guldasta in Iran for the adhān is a subsequent development, although it is interesting that in one instance, that of the Manār-i Guldasta in Isfahan (catalogue 27), the guldasta has been sited on top of the old minaret shaft. The large platform guldasta on top of the minaret in the Masjid-i Jāmi' in Gūrgān (catalogue 31) could also be cited as a similar example, although in this case it is possible that this particular form of minaret balcony/guldasta is regional, and was always in a similar form. There are a considerable number of similar terminations for minarets in other towns in the area, the south Caspian region having always developed in a different fashion because of its isolation and the extreme climactic conditions.

5. The argument for the inclusion or not of the Persian Gulf within the context of Iran proper during the ninth century could be continued for a considerable period of time, but certainly, at that early date, the influence from Baghdad and Mesopotamia must

have been considerable, certainly as strong as that from the Iranian plateau. At a later date Sīrāf would have become more integrated with the plateau, but must always have been more outward looking since her existence was based on trade. It is therefore difficult to include the Sīrāf examples as forming part of the Iranian world.

6. The monumental staircase leading to the entrance to the Vatican museum is a much more modern example of the same principal. I have already mentioned the example of Harput in Turkey, built in 1166, in the chapter on the History of the minaret. At this point it is sufficient to reiterate the fact that this particular form of staircase does not appear at all in Iran.

7. One other form of base which does not appear in Iran is the square base with the chamfered corners to connect with the cylindrical shaft. This is a form which appears frequently in Anatolia, but which seems to have had its earliest example in Bulghar with a minaret dating from the twelfth century. It is interesting to note that Maqrīzī suggests that the Saljūqs had their summer camp at Bulghar, so that the connection between these two areas would have been strong at this period.

8. By Iranian standards, the minaret at Bālis is an anachronism and is discussed in detail in the Chapter on the End of the Saljūq Period.

9. There is also a minaret which was excavated by the Metropolitan Museum of Art at Nīshāpūr. According to the report so far published

(Hauser and Wilkinson 1942) this was an octagonal shaft measuring seven metres in diameter at the base, sited on a square base. The report dates it as early Saljūq, and publishes no further details. This minaret was apparently situated at the northwest corner of the mosque at a time of Saljūq restoration and enlargement. The report also mentions another free-standing round tower which, it suggests, was used as a look-out tower, but again, no details are given.

10. In his article on the Manārs of Isfahan (1936:323) Smith refers to this script as 'rectangular naskhī' on the evidence of a private communication from Herzfeld. In the article by Flury on Calligraphy (1964-5:1747-8) however it is referred to as rectangular Kūfic, and it seems difficult to see it as naskhī since it is characterised by its angularity, whereas naskhi is basically a cursive script. The script form is also known as 'seal script', and all authorities are agreed in attributing its inception to some form of Chinese influence. According to Kratchkovskaya (Flury 1964-5:,748n.1) the earliest specimen known of this script is on the tower of Mas'ūd III at Ghaznī, 1099-1114.

11. Sourdel-Thomine (1953:133) also suggests the second half of the eleventh century and also refers to Diez as placing it near to the Sāva and Khusrawgird minarets, an attribution with which I would agree, always excepting the fact that it does not have the finer carved brickwork associated with the other two, and I would therefore place it somewhat earlier. Creswell (1927:292) refers to it as twelfth century, which I feel is too late. The tower is also discussed in a recent article by Burkett (1973:43-9).

12. The towers shown in Rock (1930:393-7) are described as <u>tiau lu</u>,

which is translated as 'watch-towers', which guard the approach to the palace of the Chiala kings near Chiulunghsien in Szechwan. The Chiala kings were petty rulers of a small kingdom forming part of the Tibetan empire under the Yarlung kings of Tibet. The empire collapsed after the death of Glang-dar-ma in 842 A.D. (Snellgrove and Richardson 1968:275). The stellate towers mentioned by Tafel are in Choktsi in eastern Tibet, near Minya Konka (1914:Pl. LV and LVII).

13. It is possible that further investigation into the area of the Ghaznavid empire in India (now Pakistan) would reveal earlier examples. This might prove a fruitful field for research in that so far no monuments are documented from the period of Ghaznavid occupation, a surprising fact when one considers the period in question and the undoubted interest the dynasty took in architecture.

14. The influence of the design of the minaret of Jar Kurgan on the tomb tower of Pādkān East has already been noted by Pope (1964-5: 1027).

15. It is interesting to note that if this minaret was one of a pair associated with a portal it would be a question of 'flanking' the portal, and not being sited on top of the portal as in the case of Ṭabas and Ardistān, and also Nakhichevān. The first recorded appearance of the minarets or turrets flanking a portal are in India at Delhi dating from the reign of Fīrūz Shāh Tughlaq, 1351-88 (Brown 1956:22-4,Pl.XII 1,XV 1), the Khirkī mosque and the Kalan mosque, both in Delhi. The idea next appears in the Bībī Khānum mosque in Samarkand (Hill and Grabar 1964:52,figs. 39-44), dated to the early fifteenth century.

16. The octagon appears to have played a significant role in Turkish cosmological thought, particularly in early Uyghur Turkish Buddhist texts, and certain Mahayana texts even refer to an octagonal earth. This tradition apparently continued into Islamic times, because when he rebuilt Rayy in 1066 after it had been destroyed by the Oghuz in 1033, Tughril Beg built it in an octagonal form (Esin 1973). This theme would have been strengthened after the Turkish conversion to Islam because of the important role of the octagon in Islamic Angelology (private communication from Professor S.H. Naṣr).

## Chapter V. The Origins of the Iranian form of the Minaret.

In the preceding chapter the essential Iranian minaret form has been detailed, and by comparison with the examples and descriptions of the various forms assumed by the minaret in western Islamic lands, can be shown to be basically new, or at least different from the other types. The important question which must therefore be posed is where did this particular form originate, and how did it come to be so firmly established in Iran within such a short space of time?

The answer to this problem must in some way be associated with the various trends which were outlined in the introduction; the upsurge of Persian nationalism combined with the almost inherent ant-Arab feeling, and the advent to power of the Central Asian Turks. It would seem that the form itself must probably be connected with the latter, whereas the former trend was one of the factors which helped to assure its universal distribution. I propose first of all to investigate the origin of the form, and then to suggest how the feeling of nationalism may have helped to lead to its distribution.

The Central Asian influence will be shown to be strong with regard to the decoration employed on the minarets of the eleventh and twelfth centuries, and it would therefore seem profitable to examine what general influences would have been brought to bear within Central Asia which might have resulted in the creation of this form. There would appear to be three main influences at work: the Chinese, as representing one of the great empires bordering on to the area and one of the nearest great civilisations; the Indian, which was spread particularly by the considerable number of Buddhist missionaries

moving up from northern India mainly through Farghāna; and the indigenous Turkic traditions. These must be examined seperately.

It has been suggested by Thiersch (1909:99) that one of the origins of the western minaret form may have been the Chinese pagoda. Although it seems unlikely that there can have been a direct relation between the Chinese towers and those of western Islam, nor, as has already been demonstrated, was there any need for such an origin, the influence of China on Central Asia must be considered as a possible origin for ideas which were subsequently taken from that region into eastern Islamic lands.

Chinese influence did not expand into the region of the Tarim basin and Central Asia proper until the second century B.C. (Boulnois 1966: map 2; Talbot Rice 1965:177) and later, by which time the area was already strongly influenced by Indian culture (Note 1). As far as the arts of painting and the decorative arts were concerned, China appears to have exercised a major influence, both Chinese and Indian models being used by the Central Asian artists. However as regards architectural forms, and in particular the actual tower-pagoda shape, these seem to have been taken almost entirely from Indian models, although the fact that the Chinese traditionally built towers must have had some effect.

That there was a tradition of tower building in China is attested by the t'ai, or look-outs, which existed in pre-Chou times (Sickman and Soper 1971:367) (Note 2). In Han times, 206 B.C. to 220 A.D., the towers fromed one of the most impressive elements in the palaces and were often of considerable height, accounts speaking of towers

of over 200 Han feet (Sickman and Soper 1971:378).

When Buddhism assumed sway in China in the fourth century A.D., it was the pagoda which became the principal monument as the stupa was that of Indian Buddhism. These were often built of wood, but in the fifth century, a three-storeyed stone pagoda was built (Sickman and Soper 1971:389). In his section on pagodas, Willetts (1958: 723-35) traces their origin back to the Indian stupa form, although entering a caveat that the subject is still a matter of controversy, however it was not the stupa proper which the Chinese admired and took as their model, but a still-mysterious substitute, the multi-storeyed towers built by the Kushans. The great tower of Kanishka near Peshawar was apparently well-known and commented on by a number of Chinese pilgrims (Sickman and Soper 1971:389) (Note 3). The monuments which Kushan Buddhism erected in Turkestan, and in particular in Chinese Turkestan as part of their eastern expansion, would have been even closer models for the Chinese, and the ruins of a number of multi-storeyed brick towers are visible today in the Turfan region (Sickman and Soper 1971:390).

It is extremely interesting to see the forms assumed by the various Chinese pagodas, because these forms must have been known to the people of Central Asia. In Honan there is a twelve-sided pagoda dating to about 520 A.D.; a square multi-storeyed one at Yün-chü-ssu from the early eighth century; and a tall octagonal multi-storeyed pagoda dating from the mid-eleventh century at K'ai-feng, Honan (Sickman and Soper 1971: figs. 258,268,283) (Note 4).

In the eleventh and twelfth centuries there were a number of pagodas

built which are of interest in that they were built at the same time as the minaret group with which this paper is concerned. In form they were usually octagonal, and Sickman has assembled accounts of 23 of these towers, six from Hopei and the remainder from Manchuria. Whether at this stage anything more than a coincidence should be noted, or whether a closer affinity can be shown is beyond the scope of this thesis, but the movement of ideas across Central Asia to points on either side, in either Greater China or Greater Iran, is certainly not to be discounted, and future research may provide evidence of much closer contact than is currently considered.

Thus there was a tradition of tower building in China which is important as a background to the Central Asian pattern. These towers were however, strongly influenced by Indian traditions, and in terms of providing a model for the Central Asian towers, it is to India that one must turn, although the existence of the Chinese tradition meant that the Indian forms probably found a readier acceptance among the Central Asian Turks.

From the time of Asoka, 274–232 B.C., Buddhist missionaries had been moving into Central Asia with considerable success, and as the area became progressively more Buddhist, the influence of Indian culture as being that of the Buddhist holy land assumed an increasing ascendancy. Not only was the influence of various forms and ideas felt, but direct attempts were made to actually copy Indian originals, architectural features as well as smaller examples in the decorative arts. The stupa, one of the most central of all Buddhist concepts, could hardly fail to have its imitators. Willetts (1958:figs.104 and 105) shows a number of towers and stupas which could be the

originals for the various forms of Chinese pagodas; these drawings can also serve as models for the towers to be found in Central Asia dating from this period, of which Le Coq (1913:Pl. 59,67,68h,70f,g, h,71c,72h,75) shows a number of examples. Certainly the bronze votive model (Willets 1958:fig. 104c) is a perfect exemplar for the Qocho towers (Le Coq 191 :Pl. 68h).

This strong Indian influence continued in Central Asia for a considerable period, certainly as long as Buddhism was strong in the area, an extremely natural influence when one considers the importance of trade and religion, but above all the latter. This influence was further strengthened at the time of the Tibetan empire during the seventh, eighth and ninth centuries owing to the direct Indo-Tibetan link which was imposed on Central Asia in the wake of the Tibetan armies (Snellgrove and Richardson 1968:31-2). Missionaries continued to pass northwards, but even more pilgrims came south to gaze on the splendours of Buddhist India and to visit the sites sacred to Buddhism. It is now interesting to see how these ideas were transformed within Central Asia.

From early times, possibly dating back to the traditions derived from the ancient Chou, 1st millenium B.C. (Biot 1851:vol. II,564), the Scythians built round corner towers at the four corners of their square walled cities. This tradition was followed by the eastern Huns, and also the Turks for whom at an earlier stage the four corners indicated the cardinal directions and hence the place for the lokapala shrines in the corners (Note 5). These towers were called Idhiz eb, sacred house, and were placed at the corners of temples and cities, and were built as high as possible so that

the shadow would carry the beneficent effects as far as possible (Esin 1972:77 n.18). There were many such towers in the Turkish Buddhist city of Qocho (Le Coq 1913:Pl.68h), the probable origin of which form has been discussed above.

There was thus a tradition of sacred towers in Turkish Central Asia which looked to India for its inspiration. Based on the stupa form they gradually assumed a more tower-like shape, with a high square base and a cylindrical or conico-cylindrical shaft, often of no great height. The shaft in fact represented the hemi-spherical stupa shape of north India in an elongated form (Le Coq 1913:Pl. 70f, g,h). An intermediate stage is shown by Stein (1931:figs. 1,16,17, 18,28,34,39) in Swat which he dates to the 'Gandhara' period (Note 6). These towers would form an almost perfect prototype for a cylindrical minaret on a high square base. There is however in addition a type of stupa which rests on an octagonal base, in turn standing on a square base (Le Coq 1913:Pl. 71c), which must have considerable significance as a model (Note 7).

The stupa is one of the oldest Buddhist forms in India, and as such, as has already been suggested, had a considerable influence on the development of the Central Asian tower form. There is however, another Indian form which, both in appearance and in concept, is of great importance in the study of the possible origins of the eastern Islamic form of the minaret, that is the so-called Asokan column (Note 8).

Asoka himself both erected columns in order to have his edicts engraved upon them, and also caused those same edicts to be engraved

on already extant columns (Irwin 1973:709). These columns, bearing the edicts on their shafts, were thus essentially associated with the propagation of empire by law, in the case of the Asokan edicts this would have been viewed as an extension of cosmic law. They were also erected as commemorative columns, witness those set up by Asoka himself to commemorate his visits to the site of the Buddha's birth in Lumbini which are inscribed as such (Irwin 1973:710). As both columns propogating an empire by law and also commemorative columns, they can be regarded as columns of victory.

However these columns are to be regarded they were later directly associated with Buddhism, and since they were of considerable antiquity, perhaps some in fact being contemporary with the Buddha in the light of Irwin's recent researches and even earlier in origin, they were regarded as objects of particular veneration by subsequent Buddhist pilgrims (Note 9).

Identifiable remains of some 40 of these columns survive (Irwin 1973: 706), from which it can be shown that they consisted of a tapering cylindrical monolithic shaft, with no base, but surmounted by an important capital. This is usually in three sections, the lower part being bell-shaped and carved to represent a rope moulding. Above this is a flat circular or square abacus which acts as a base for the upper section which is usually an animal figure. In the famous case of Sarnath it consisted of four lions with their backs joined, and was apparently originally surmounted by a chakra, a wheel of the law (Irwin 1973:figs. A and 2).

This idea of engraving edicts on stone pillars was certainly continued

in other countries which were under the Indian influence, and particularly under the influence of Buddhist India. In Tibet a series of these pillars, although of different shape to the Mauryan columns being rectangular in section, have inscriptions dating back to the eighth and ninth centuries, the period of the Yarlung kings (Snellgrove and Richardson 1968:54,91-2). These follow the introduction of Buddhism into Tibet, and are significantly decorated with motifs not only from China and Central Asia, but also from India (Note 10). The appearance of such forms in Tibet is of great significance, particularly during the early Islamic period since, until the fall of the Yarlung kings in about 842 A.D., the Tibetans were one of the most important military powers in Central Asia, occupying important points on the main routes through the area, and at one time even capturing the Chinese capital Chang-an (Snellgrove and Richardson 1968:31) (Note 11). As such they were in constant contact with the various Turkish powers and either allied with the Turks against the Chinese, or made alliances with one Turkish section against another. Significantly they even made contact with the Arabs through their Viceroys in the former Persian dominions in western Central Asia. This relationship of guarded co-operation was broken for a time by the Khālifa Hārūn al-Rashīd when it seemed that the Tibetan power was growing too great (Snellgrove and Richardson 1968: 49) (Note 12).

It is thus of considerable significance that the idea of commemorative, victory, or as it were 'legal' columns should have been common knowledge among the peoples of Central Asia. An example of this sort of column which would have been most readily available as an inspiration in later Islamic times is that of the so-called Minār-i

Chakrī just outside Kābul (Auboyer 1968:Pl.89; Wolfe 1965:142). This solid column built of schist consists basically of a cylindrical shaft topped by a bell shaped capital. It stands on a square base and the whole is some twenty metres high and over three metres in diameter. It is said to date from the second century A.D., and its name, Chakrī, could be an allusion to the chakra which perhaps originally topped it in the tradition of the Asokan columns. Standing on top of a spur, it dominates the surrounding landscape and must always have been an object of considerable interest.

Mention has already been made in the last chapter of some of the Tibetan 'stellate' towers in eastern Tibet (Tafel 1914:Pl.LV,LVII; Rock 1930:393-7), however there were also other towers in Tibet, and the T'ang annals refer to the use of fire and smoke signals to give warning of enemy attacks, with watch-posts every hundred li (Snellgrove and Richardson 1968:29). The tower of the castle of Yum-bu bla-sgang , home of the early kings in Yarlung, is similar to the defence-towers with which the southern part of Tibet is scattered (Snellgrove and Richardson 1968:51), and the Tibetan watch-towers in Chinese Turkestan are referred to in Tibetan texts (Thorn 1951:135) (Note 13).

These forms of tower and commemorative column were thus embedded within the race consciousness of the Turkic peoples prior to their conversion to Islam and their advent into the Iranian lands, but there was one other form which, as good muslims, they hated and vilified, but which also had a similar shape, and under another guise may equally have had a considerable influence. Describing the idol of Somnath, al-Bīrūnī (1964:vol.II, 103-4) says that it was in three parts, the lowest part quadrangular, as if it were a

cube or quadrangular column. The middle part octagonal, its surface being divided by four pilasters. The upper third round, rounded off so as to resemble the gland of a penis. To erect the figure the lower quadrangular third should be within the ground leaving the octagonal third and round third remaining above the ground.

All Shiva lingas are of this form even today, and are the objects of veneration and worship in all Shiva temples. Undoubtedly such an object would arouse disgust in Maḥmūd of Ghaznī and his men. He had vowed to spend his life in the destruction of the idols of the Hindus (Note 14), and the great Lingam of Somnath must have been an object of particular hatred since we read that it was destroyed by his order (al-Bīrūnī 1964:103). He ordered the upper part to be broken, and the remainder to be transported to his residence, Ghaznī, with all its trappings of gold, jewels and embroidered garments. Part of it was thrown into the 'hippodrome' of the town (Note 15), another part was put before the door of the mosque of Ghaznī "on which people rub their feet to clean them from dirt and wet." Obviously, despite its apparent similarity made all the more evident because of its obvious size, such an object of abomination could not be viewed as a prototype for the manāra whose name is etymologically linked with nūr, the light (of God); however the lingam was an all-pervading symbol in India, and had been so for a considerable period of time, and it had apparently already made a certain transition.

In Qocho (Le Coq 1913:Pl.60) a stone votive stupa was found, engraved with Chinese characters but certainly having a considerable Indian influence in its decoration. This votive stupa is 66 cm. high and

and is made of red sandstone, which according to Le Coq is found in T'ien-Shan north of Turfan. It has an octagonal base 25 cm. high, above which is a cylindrical section 11.50 cm. with a Chinese inscription containing the twelve Nidanas (Note 16). The upper section consists of an eight-sided rounded cupola, divided into eight arched recesses, each of which is ornamented with a Buddha figure in relief. The dome of the cupola is formed by an inverted lotus with a small crown shape on top. This form is absolutely that of the visible section of the lingam, the similarity being further emphasised by the slight swelling of the cupola section which resembles the gland of the penis. The form is also exactly that of the Iranian minaret, an octagonal base, cylindrical shaft, and slightly overhanging balcony upper section. Thus by a round-about way, and after having undergone a change of religion, the Shiva lingam may well have acted as one of the influences which helped to form the shape assumed by the eastern minaret.

While this analogy might appear slightly exaggerated, it is of importance because of the way ideas can be shown to have travelled in many directions both within the Islamic world and outside it by means of small portable objects. The carved ivories and also some of the textiles were the means whereby a number of architectural patterns travelled considerable distances, and it was one of the apparent aims of early Islam to transfer effects from one technique to another (Grabar 1973:192). The use of such a small object as the original of the eastern form of the minaret is not therefore such a far-fetched idea as might at first appear, although it must be taken into account alongwith the tradition of towers, stupas and commemorative columns which was common in the area.

One of the functions of the Central Asian towers which has been mentioned in connection with the Tibetan towers is as a fire-signal-tower. This form had a very early history in Turkestan going back to pre-Christian times, although the majority of these towers, at least the surviving ones, have a square body (Esin 1972:Pl.XVIa,b). There may however have been cylindrical ones because Kashgari compares the qarghu, fire-signal tower, with the minaret (private communication from Professor Esin). This particular function would appear to have had a distinct on the spread of the minaret, and I shall revert to this in the next chapter.

It would seem therefore that the origins of the form of the Iranian type of minaret can be traced to an eventual Indian prototype. This Indian influence was not however direct, but was transmitted, particularly through the spread of Buddhism, through Central Asia where, at least in this particular field Indian influence can be shown to have been paramount. These influences were certainly strongly in evidence at the time of the development of the early Turkish empires, and would have formed strong background patterns which the Turkish tribes would have brought with them when they emerged from Central Asia to take control of the Iranian lands. One thing that must be stressed is that all these forms were associated with the spread of Buddhism, and as such would not have been abhorent to the Muslims. From the eigtht century Buddhism was regarded as an ethic religion comparable to Judaism and Christianity, and verses 1 and 2 of Sūra 95, the Fig, were interpreted as a reference to the Buddha (the fig-tree), Jesus (the olive), and Moses (Mount Sinai). This is expounded by Hamidullah in Le Prophète de l'Islam.

It would therefore have been perfectly natural, and in accordance with the teachings of Islam, for the Turkic peoples, who were accustomed to building towers and commemorative columns having a sacred nature, to continue with this form of construction when they became masters of the Iranian lands, transforming and adapting the shape to fit in with the Islamic form, the minaret. Thus I would suggest that the Iranian minaret is a combination of the Indian stupa form and the commemorative column, which, having crossed the Himalayas, combined with the Central Asian tradition of tower building for defensive purposes and also for communication purposes. The possibility of the influence, again indirect, of the Shiva lingam is perhaps somewhat tenuous, but the similarity of form is striking. It remains to be determined why such a form should have been siezed on so avidly by the Persians and spread throughout the area with such speed.

Chapter V. Notes.

1. In 128 B.C. the Chinese Emperor Wu Ti sent Chang Ch'ien through Central Asia in the hopes of securing the Yüeh-chih as his allies against the Huns who were harassing his north-western Frontier. Although this mission was not a complete success, it opened China to contact with the west, and soon regular caravans were passing to and fro along the Silk Route. The routes to the north and south of the Tarim basin were in constant use during the next few hundred years, and a number of forts were built to control the trade. Chinese influence over this area fluctuated considerably, but from time to time armies were sent into Central Asia, and at the time of the Arab conquest in the seventh century the Chinese were in fairly full control of the entire route (Boulnois 1966:24-32,61-73).

2. Although in later usage the t'ai were simply elevated platforms, the word should be taken to mean towers generally, and many were certainly built of rammed earth which was probably plastered (Sickman and Soper 1971:367).

3. The ruins of this stupa, said to be the largest in India, cover an area 265 ft. across east of Peshawar. In 1909 a relic casket, said to be of the time of Kanishka containing ashes of the Buddha, was discovered during excavations. The casket was subsequently sent to Mandalay. When it was seen by the Wei pilgrim Sung Yün in the sixth century it had already been burned and restored three times. His description makes it of wood in thirteen storeys, topped by an iron mast with thirteen golden disks, the total height being 700 Wei feet (Sickman and Soper 1971:390).

4. In addition there is a most interesting octagonal tomb pagoda at Hui-shan-ssu, Mount Sung, Honan, which dates from the eighth century. This has a remarkable resemblance to the octagonal tomb towers of Iran, with a high solid base, and a tapering pointed roof (Sickman and Soper 1971: fig. 272). In T'ang times there appears to have been a tradition of tomb pagodas, which may well have found there way across to the west via Central Asia.

5. In an article on the Scythians, Tolstov (1961:56-64,69-70) draws attention to the apparently purposeless round corner-towers of Babiche-mulla in Khwarazmia dating from the fourth to the second century B.C. which he attributes to a "Barbarian" tradition brought from eastern Asia.

6. Among the various stupas noted by Stein in his "Archaeological Tour in Swat and adjacent Hill Tracts" that of Top-dara (1931:fig. 1) is of interest. It has a square base and a two-stage cylindrical shaft with a rounded dome-like top. Like all stupas this is solid, and can be taken as typical of the stupas which Stein photographed. All have a comparatively high cylindrical body with low rounded tops, and either have square bases or none at all.

7. Qocho is an important city for this period in that it was probably founded by the Soghdians around 60 B.C. according to Chinese annals (Le Coq 1913:4), and it looked for its culture much more to the west than to the east. Influences can be shown to have come up through Soghdiana, Bactria and Gandhara from India and also from the Iranian plateau. The architecture would seem to be mainly influenced by Indian forms, although there appear to be a number of

Iranian influences also. Some time after its initial foundation it was occupied by the Uighur Turks.

8. While the origins of this form are as yet uncertain, it is the uses to which they were put from the period of Asoka onwards which is particularly pertinent to this argument. Until Irwin's analysis (1973:706-20) a non-Indian origin had always been posited for these columns, but apparently the last word has not yet beenwritten on this subject, and Sir Mortimer Wheeler (Irwin 1973:714) has already stated that free-standing pillar-architecture was unknown in the West before the Romans.

9. The pillars are mentioned and described in accounts of a number of Chinese pilgrims, in particular the accounts of Hsüan Tsang who went on a pilgrimage to India in search of 'true' texts and 'true' doctrine in 629 A.D., not returning to China until 644 A.D. (Boulnois 1966:98,156). They were thus well known in the seventh century, objects of pilgrimage and veneration, and undoubtedly copied in other countries which became Buddhist.

10. The Tibetan pillars were used to record a number of different edicts and decrees, one, the Zhol pillar below the Potala in Lhasa was set up by a powerful minister to record his services to the king including victories over the Chinese, and the rewards he had received. Another, the sKar-cung pillar near Lhasa, was much more in the style of the Asokan columns being set up by King Khri-lde-srong-brtsan in the ninth century to decree the continuation of the Buddhist religion and to enforce the same on his successors. A further pillar known as the stone pillar in Lhasa bears a bilingual inscription recording

the treaty made in 821-2 between China and Tibet (Snellgrove and Richardson 1968:38,39,91-2).

11. The tibetan power at one time was so great that when one of the Tibetan envoys asked for copies of the Chinese classics, one of the ministers supplicated the throne against this saying that if they were also versed in the classics they would become even stronger. They were organised on a war-footing with a system of general military service (Snellgrove and Richardson 1968:31).

12. The tibetans probably gained their knowledge of Byzantium and Rome from the Arabs, using the name Khrom, based on the Arabic Rūm, to designate an empire of whose exact location they were never sure (Snellgrove and Richardson 1968:49).

13. These particular watch-towers are situated in Miran in Chinese Turkestan, and according to the texts, date from the eighth century.

14. According to 'Utbī (trans. Raverty 1881:vol.I,82-3) like all Muslims in India Maḥmūd of Ghaznī considered the Indian idols objects of abomination, comparable to the Meccan Manat broken to pieces by the Prophet, and he had vowed to spend his life in the destruction of the idols of the Hindus. On the way to Somnath the Ghaznavid army was led astray to a barren desert by a Brahmin who wished to save Somnath's idol. It was through Maḥmūd's prayer that the army was saved from death through thirst, but hundreds died before the final assault, at the end of which the idol was broken to pieces.

15. I have been unable to locate this so-called hippodrome in

Ghaznī, but it may have been something like the Great Esplanade at Sāmarrā (Creswell 1968:263-4), or possibly the Polo-ground.

16. The twelve Nidanas are the spokes in the ever-turning Wheel of Life; the component factors which cause its ceaseless turning (Humphreys 1951:97-8).

## Chapter VI. The Spread of the Iranian Form of the Minaret.

It would seem that the origin of the form of the Iranian minaret as it appeared in the eleventh century is to be found immediately among the Turkic peoples of Central Asia prior to their arrival in the eastern lands as rulers rather than mercenaries, even if it can be shown to have had an earlier Indian origin. What is yet unclear is why this particular form was so well received by the Persians, and why it spread so rapidly and appeared in such large numbers over such a large area.

Prior to the eleventh century there are extremely few remains of any minarets at all in Iran, and of these the ground-plans, almost without exception in so far as we have any are square, following the western Islamic tradition, or possibly the indigenous tradition as represented by the tower of Gūr/Fīrūzābād. Against this it might well be argued that all architectural remains from this period are scarce. It is as if an architectural blight had settled over the country during this period, and only with the advent to power of the Būyids do we read of a large construction programme being undertaken (Note 1). This picture may be slightly changed as a result of future archaeological investigations, but at the moment, the picture does look particularly bleak for early Islamic architecture in Iran.

Such a state of affairs is particularly remarkable when one considers the number of buildings and the importance and numbers of the builders and architects in pre-Islamic Iran, and the fact that they continued to supply builders in early Islamic times outside Iran. When Ziyād,

the Arab Governor of Baṣra wanted to rebuild the Great Mosque at Kūfa in 50/670 , he summoned non-muslim workers to erect a building without equal (Creswell 1968:13,156). A man who had served as a builder under the Persian King Khusraw was apparently the one to give advice on how the building should be constructed (Note 2). Persians were also used for the re-building of the Ka'ba by Ibn al-Zubayr in 65/684 (Creswell 1968:156), and in 145/762 when the Khalīfa al-Manṣūr decided to build Baghdad, he assembled engineers, architects and land surveyors from various parts of the empire, including western Persia (Creswell 1968:163). This implies that at least until the eighth century Persian builders were well-known and sought after in other parts of the Islamic world.

It has been suggested that one of the reasons for the dearth of monuments in Iran prior to the late tenth and eleventh centuries is that they were built generally in mud-brick, and that they would therefore disappear with very little trace. The use of baked-brick was certainly known in Iran in the first millenium B.C. (Wulff 1966: 115), and continued in use during Achaemenid times, although it appears to have been regarded as an inferior technique in Sasanian times and was usually covered with a layer of stucco (Note 3). The vast majority of buildings in Iran must have been of mud-brick, but the use of baked-brick was known, and had there been a need for the erection of a number of minarets, these could certainly have been achieved (Note 4). The lack of remaining minarets from this period would therefore seem to indicate that, prior to the eleventh century, there was no pressing need for a large number of minarets, and that something occurred at this point in time which rendered such a number of minarets essential. The possible reason for this

change lies with the early association by Kāshgārī already mentioned in the previous chapter, linking the qarghu, fire-signal tower, of Turkestan with the minaret.

In the context of fire tower, that of Gūr is extremely important since it is the sole remaining tower as such from Sasanian times in Iran. It has been suggested (Pope 1964-5:567) that this tower was used to display the sacred fire on certain special occasions, an idea which would normally be opposed to present Zoroastrian practises since the sacred fire is usually kept hidden (see the discussion in Chapter III on Early minarets in Iran). While it is important for the study of this development in Iran to know that it existed, its very uniqueness is significant. Given the Sasanian tendency to build, and to leave records of their buildings, it would appear that there was no tradition of building towers in Iran; certainly nothing that could be described as comparable with towers in a group or sequence being used as fire-signal towers (Note 5).

It would appear that this negative tradition continued during early Islmaic times because, as I have mentioned in Chapter III, Herzfeld's list only contains some four examples of minarets being built in Iran before the eleventh century, while archaeological evidence would only add a further two to the list, Dāmghān and Sīrāf, leaving Nāyīn and Shushtar as the only two possible survivors from that period, with the addition of the two mud-brick minarets of Fahraj and 'Izābād. Thus, as I have suggested earlier, this implies a drastic change in tradition at the beginning of the eleventh century.

The tradition in Central Asia during the same period is completely

different. As early as the Han dynasty there are references in Chinese documents to multi-storeyed buildings in Tibet, while the Han themselves built watch-towers (Willetts 1958:724) which had a long tradition of tower building behind them. As has already been demonstrated in the previous chapter, this tradition was continued in Central Asia in such places as Qocho, and also in Tibet which excercised hegemony over much of Central Asia during the eighth and ninth centuries (Snellgrove 1968:31). This is of great importance when considering the watch-towers and the signal towers used to transmit messages or warnings of approaching danger, and at the same time act as guide points for messengers.

As can be seen by reference to the map (fig. 2), the remaining minarets of the eleventh and twelfth centuries in Iran do tend to form a coherent group. These minarets, alongwith those now disappeared leaving no literary or archaeological trace, lined the major trade routes which linked the various towns of Iran, and also joined the Iranian network to those beyond the confines of modern Iran. In a comparatively short space of 200 years, after a time when there were very few minarets, this sudden growth is surprising and requires explanation.

While I have already demonstrated that a great number of these minarets could have been used for the adhān, or at least had the potentiality of such use, most of them could have been used as beacons or guide-points, and it is with the aspect of the minaret as manāra rather than mi'dhana that this chapter is concerned. Under the Ghaznavids eastern Iran formed part of a large empire, but this portion of the empire had only begun to be organised

along imperial lines (Note 6), when it became part of the much larger Saljūq empire which took over the Ghaznavid administrative techniques, along with much of the personnel, and began to move and expand steadily westwards (Note 7). With an empire which stretched into Central Asia on the one side and across into Iraq and Syria on the other, continually waging war on its various boundaries as well as dealing with domestic troubles, communications between the parts of this far-flung empire became of prime importance (Note 8). At a later date, under the Mongol Il Khānid empire, the speed with which messages were passed from one end of the empire to the other became proverbial (Note 9), and a similar situation must have been in existence under the Saljuqs since armies were continually being moved from one site to another to deal with incipient trouble (Note 10).

Military requirements in the shape of fast communications in order to have the latest and fastest news service necessitated some system of speedy contact, but so did one other extremely important aspect of life in this period, which in many ways provided the lifeblood of the empire. The interest which all rulers took in the smooth running of trade (Note 11) is well attested by the number of caravanserais, often of a princely splendour such as that of the Ribāṭ-i Sharīf in Khurāsān (Note 12), which the Saljūqs themselves endowed and maintained throughout the empire (Note 13). For both these reasons fast communications were imperative, and this is where the guiding lights in the minarets were of such importance (Note 14).

Two examples may help to clarify the situation. An examination of the remaining minarets which line the north and south banks of the Zayanda Rūd leading into Isfahan from the east will show that they

have been specifically sited to lead travellers by easy stages into the city of Isfahan, each minaret marking a point where a safe resting place for the caravan would have been available. The most easterly, that of Varzana marks the final crossing place before the river enters the Gāvkhāna Salt Lake, and a place at which at least two major trade routes crossed, that coming from Shiraz and going to Nāyīn and so north, while another led east to Yazd and so across the desert to Khurāsān, the same route to the west , along the Zayanda Rūd, leading into Isfahan (Note 15). This last route was marked by a series of minarets, Barsiān, Ziār, and Gār, from where it would have been only a short stage before the lights of the Isfahan minarets would have been visible. Of this group of minarets, that of Varzana may be explained as being sited at an important crossing and the site of a minor town, but the others would seem to be out of proportion to the size of any community which they might have been called upon to serve in their capacity as mi'dhana, and certainly the size and richness of a minaret such as that of Ziār could only be justified if it was serving a most important need as a guide to caravans.

Another example is that of the creation of the Mīl-i Nadīrī and its fellow tower, now destroyed (catalogue 11 and 42). The description of their erection by Qāvurt Ibn Ghaghrī Beg (Note 16) specifically mentions that the top of one minaret could be seen from the base of the other, and mentions the number of lower markers which were erected to mark the road between the two in case of its being covered with sand (Bosworth 1968:86). In addition the description lists the various caravanserai and hammam facilities which were were provided for the travellers at the base of each tower (Note 17).

This last example provides a concrete proof of the creation of towers for the purposes of assisting communications and trade, and I would suggest helps to explain the speed and extent of the construction of the minarets of this period. The qarghu was an accepted feature of Central Asian Turkish life, and performed a service of which the Saljūqs in particular found themselves in need very shortly after they acquired their Iranian empire. The idea of the minarets as beacons and watch-towers was thus brought into Iran by the Turkish invaders, who came as rulers and not, as previously, in the capacity of slaves. Formerly in a servile capacity they would not have felt the need for fast communications which is the essential requirement of the ruler; when they did appear in that capacity the conceptual required form was already in their popular memory, while the means of executing these ideas was already to hand in the skills of the Iranian craftsmen. What is still unexplained is the reason for the particular form which this series of Iranian minarets took.

Although it has been established in the preceding chapter that the form of tower which would have been most acceptable to the Turkish rulers was that which the Iranian minaret ultimately assumed, the apparent tradition in Iran, in so far as any still existed, was for the square type of minaret more closely linked to those of western Islam. Since it would certainly have been Persian craftsmen who executed the actual constructions, even if under Turkish guidance, or at least command, it might have been assumed that they would have developed a tradition which, however intermittently, had been that of the country until the end of the tenth century, instead of accepting enthusiastically a new form, apparently counter to that tradition.

While much of the impetus must have come from the Turks themselves,

I would suggest that one aspect which would have appealed strongly to the Persians was the fact that it was a non-Arab design. The question of the upsurge of Persian nationalism has already been discussed in the Introduction, and in particular the strong feelings against the Arabs which this engendered. Had there been a strong Persian tradition of tower building to which the craftsmen could have turned as part of their search for self-expression, there might have been a totally different outcome, but having such a tenuous tradition of their own, when a new idea was presented, and one from an area over which the Sasanians had excercised at least nominal hegemony, I would suggest that it was siezed with avidity and developed with the superb skill which the Persian craftsman had acquired and developed in the preceding century.

One further aspect of the minaret which has been alluded to, and which would have tended to reinforce the Turkish feeling for the form it eventually took, was its use as, and relation to the idea of a commemorative column. Many of the inscriptions on minarets can be seen as commemorative, if only of the fact of their erection (Note 18). While such a function has little or nothing to do with any liturgical or practical role which the minaret might play in its capacity as either mi'dhana or manāra, the fact that so many minarets bear inscriptions recording the power or generosity of their builders must show that they fulfilled a need in that direction (Note 19).

Thus a number of strands came together to ensure that the Iranian minaret assumed the form that it did. A strong Central Asian tradition leading back eventually to an Indian origin, one which

would incidentally have been reinforced by the Indian campaigns of Maḥmūd of Ghaznī (Note 20). This tradition concerned not merely the shape of the minaret but also one of its principal functions as a beacon and watch-tower. This in turn led to the need for the creation of such a number of towers as soon as the Turkic empires were established in Iran with their communication requirements linked to both military movements and to the development of trade. The new forms and ideas fell on fertile ground as far as the Persians were concerned since they could be seen in their development as something both Persian and Islamic as opposed to the strong western, Arab influence which had dominated to such a large extent formerly (Note 21).

Chapter VI. Notes.

1. I have already touched upon the building programme of the Būyids in the Introduction. Again this may be filled out as a result of future archaeological work.

2. The Persian craftsman naturally thought in Persian terms, and utilising columns from the Jabal Ahwāz, constructed a building in a high Apadana form as described by Ibn Jubayr who saw the mosque in 1184 A.D. (Creswell 1968:13).

3. Ornamental brickwork was not a feature of Sasanian building technique, and its origin in Iraq is therefore rather shrouded (Wulff 1966:118). Stucco decoration completely covered the walls of the Sasanian palaces, so that the brickwork was not seen at all (Baltrusaïtis 1964-5:601).

4. The minarets of Fahraj and 'Izābād are cases in point. If they do date from this period then others could equally well have been built. The Tulunid influence in Fahraj would perhaps seem to indicate that it was an outside influence at work and not an Iranian one, which does little to change the general picture of the situation in Iran.

5. It would also seem unusual for fire to be used for such a prosaic duty as signalling, given its sacred character in a Zoroastrian community.

6. Khurāsān was only formally annexed to the Ghaznavid territories in 388/998, and ruled for only 40 years. During this period the

province was milked for taxes to support the Ghaznavid empire, so that the exactions of the officials alienated all support for the regime. The Ghaznavids themselves failed to identify with the historic interests of Khurāsān, that is , with the securing of internal prosperity, an atmosphere in which commerce and agriculture could flourish, and with the preservation of the north-eastern frontier against external invaders from Central Asia. It was of course this last point which enabled the Saljūqs to advance so easily (Bosworth 1968:12-14).

7. The Saljūqs took over many of the forms and ceremonies of the Būyids, despite contrary asservations (Busse 1973:67) but seem to have taken over the Ghaznavid administration, although the Ghaznavids also ruled with the splendours of Iranian monarchs (Bosworth 1968: 14).

8. The barīd was used for the transmission of messages between government agents and those in the capital, and the barīd agents acted as a spy service and kept watch over and reported on events taking place in various parts of the empire. It was abolished by Alp Arslān over the protests of Niẓām al-Mulk, who probably had his own agents throughout the country (Lambton 1968:267).

9. The carriage duty which consisted in providing animals for the barīd, the postal service, was already in existence at the time of the Khalifate, but only in Mongol times do the sources describe it as a national calamity (Petrushevsky 1968:536).

10. Yāqūt wrote that by the thirteenth century in one area the

lands had entirely gone out of cultivation because the canal had entirely silted up, the Saljūq Sulṭāns having ever been too much occupied with their wars to attend to the needful dredging and the mending of the dykes:'further their armies had made a roadway of this same canal, whereby both district and canal have now gone to ruin' (Le Strange 1966:59-60).

11. There were city-emporiums lying on the international caravan routes which were storing places for goods and points of trans-shipment. Hurmuz, transferred from the coast to a bare little island in the Persian Gulf flourished entirely thanks to the transit trade, as did Sīrāf, and these great city-emporiums far surpassed anything comparable in western Europe during the late mediaeval paeriod (Petrushevsky 1968:506-7).

12. The Ribāṭ-i Sharīf was founded under Sanjar's rule in Khurāsān in 508/1114-5 and restored in 549/1154-5 (Godard 1949/1). It is a magnificent caravanserai built of baked-brick with fine stucco decorations, with two internal courtyards, each courtyard being built on the four īwān principle. The second courtyard is the more magnificent, and contains two seperate apartments, each on the four-iwan principle, presumably for the use of the Sulṭān or senior officals.

13. A considerable number of the caravanserais of Iran are noted on the map accompanying the article on Caravanserails d'Iran by M. Siroux 1949.

14. As an example of the importance of lighthouses, Le Strange

notes (1966:49) the construction of a scaffolding of great beams of teak wood about 40 yards high built at'Abbadān to warn mariners. On its summit was the watchman's cabin, and the platform being stone-flagged and supported on arches was used at night for a brazier where a beacon-fire was lighted.

15. I am indebted to M. Siroux for his information about the details of these routes into Isfahan.

16. Qāvurt was the eldest son of Chaghrī, one of the three original Saljūq brothers, and he established himself in the Kirmān province, where his descendants ruled for the next 140 years (Bosworth 1968: 58-9)

17. Kirmān prospered under the descendants of Qāvurt, and in the last decades of the eleventh century and the early ones of the twelfth, Kirmān and Jīruft enjoyed great commercial activity and contained colonies of traders from as far afield as Byzantium and India (Bosworth 1968:55-6).

18. Although the majority of the inscriptions on the minarets in this group are Qur'ānic, nine do have historical inscriptions which record the date of erection (see the Chapter on Inscriptions).

19. One of the roles which the Saljūqs appear to have taken over from the Būyids was that of builder. Reference has already been made to the building programme of 'Aḍud al-Dawla in his role as a Persian Great King, and the number of monuments erected by the Saljūqs in the very short period of time in which they were effectively

in power is remarkable. One example, that of the Masjid-i Jāmi' of Gulpāyagān, which was built by Abū Shujā' Muḥammad ibn Malik Shāh, 498/1105 - 511/1118, has a further take-over from the Būyid period in that the foundation inscription which runs around the base of the dome describes the Saljūq Sulṭān as Shāhanshāh (Godard 1936:193).

20. Al-Bīrūnī makes a number of references to the ideas and artifacts which were brought back from India by Maḥmūd of Ghaznī after his successful Indian campaigns( 1964).

21. While it is beyond the scope of this thesis, it would seem that the development of the four-īvān plan, at least in so far as it relates to Islamic architecture, might have similar origins. This form was developed in Parthian times, as is witnessed by the Palace at Assur (Pope 1965:fig 34b), dating from the first century A.D., the Palace at Nysa (Ghirshman 1962: 29 ), and also a further Parthian palace which is currently under excavation at Hatra (personal communication from Dr. G. Fehervari). This form was then continued in Sasanian times in the palace at 'Amman (Dieulafoy 1885:vol. V,99, fig. 85), but does not appear in Islamic architecture until the eleventh century, when I would suggest that the first four-īvān mosque is that of the Masjid-i Pāminār at Zavāra (catalogue 8, fig. 4). Apparently the idea of the four-īvān type building was exported to Central Asia where the Buddhist monastery of Adzina Tepe was built in two equal halves, each half built on the four-īvān plan (Belenitsky 1969:140). It would thus be possible for the idea to have been brought back by the Central Asian Turks. I have discussed this idea with Professor Litvinsky who excavated Adzhina Tepe, and he agrees. The problem has also been discussed by Grabar (1968:633-5).

## Chapter VII. Decoration.

Discussion of the decoration of Iranian minarets during the eleventh and twelfth centuries must inevitably centre on brickwork, and the incredible variety of bonds and designs achieved. While any such discussion must inevitably range beyond the confines of the minaret in order to discuss the use of such bonds and patterns on other monuments, I would suggest that in general it is on the minaret that these patterns first appear. Not only is the minaret a beacon, a watch-tower in the sense of carrying a guiding light on its summit, but also from the artistic viewpoint it is another form of beacon, showing the latest achievements in the field of architecture and its decoration.

As has already been mentioned in a previous chapter, the use of baked-brick has an ancient history in this area, going back to the fourth millenium B.C. in Babylonia, and certainly to the first millenium in Iran (Wulff 1966:115). During the earlier period however, it was certainly not intended to be viewed unadorned, and while the Sasanian Tāq-i Kisrā at Ctesiphon was built of baked-brick it was also covered in a layer of painted stucco. This idea was continued into Islamic times, and the mosque of the Tārīk Khāna in Dāmghān which, although built to an Arab style plan, employed many of the Sasanian techniques such as parabolic arches, has the brick-work entirely covered by a layer of plaster. Occasionally there were however attempts made towards creating some form of decorative brickwork, an example of which can be seen in the Sasanian fortress of Tureng Tepe in northeastern Iran (Deshayes 1973:147).

As would be expected, during the early Islamic period, despite the

use of Persian craftsmen as mentioned earlier, it was the influence of Mesopotamia which was predominant, and it is therefore in some of the early Islamic structures of that area that the origins of the later brickwork technique must be sought. Although the whole of Sāmarrā is built of baked-brick, almost the entire area of its visible brickwork was covered with carved or moulded stucco, so that no attempt was made to create patterns or designs with the bricks themselves. In Ukhaydir however, and also at Raqqa on the Baghdad Gate there appears the first use in Islamic times of some form of decorative brickwork in geometrical patterns (Creswell 1968:Pl. 32 and 39a). Creswell (Ibid:185-7) dates the Raqqa gate to the time of the construction of the city by al-Manṣūr in 155/772, and describes the brickwork panel, for which he uses the term hazarbāf, as being composed of four swastikas and five squares, executed entirely in brickwork. The decorative brickwork, hazarbāf, in Ukhaydir is much simpler, being formed simply of soldiers and stretchers which give a lattice effect, the basket weave being formed of soldiers, the lozenges formed by this pattern having a central cross made by a stretcher and two half bricks. This is the most basic of all patterns which would be employed later on. Creswell dates this building to 161/778 (Ibid:203). These monuments date from the eighth century, but it is not until the tenth century that examples appear in Iran.

In his analysis of pattern developments Schroeder (1964-5:1037) was led astray by the idea that one of the towers of Ghaznī was built in the reign of Maḥmūd, and not, more than a hundred years later, under Bahramshāh. This led him to mourn the lack of tenth century architecture, particularly in Khurāsān, a period when he assumed

that the genius of brickwork design was expanding. This it undoubtedly was, but not at the rate which would have been necessary for Schroeder's suppositions. There are a number of major monuments surviving from the tenth century, which in construction dates span the century. The first of these is the Sāmānid mausoleum in Bukhārā, another the newly discovered remains of the Būyid Masjid-i Jāmi' at Isfahan, and also the Jurjīr portal in Isfahan (Note 1), a fourth is the mausoleum of Arab-Ata at Tim, while the last is the Masjid-i Jāmi' at Nāyīn. I propose to discuss these in some detail in order to describe the situation in Iran before the eleventh century (Note 2).

After centuries of playing a second role in decoration, the Sāmānid tomb is a stupendous statement of the possibilities of decorative brickwork, albeit the patterns formed and the general style of brickwork is in many ways crude (Cohn-Wiener 1930:Pl. I,II,III; Pope 1964-5:Pl. 264). The patterns are aggressive and strong, making a great play with light and shade, but in an extremely unsubtle way. There is in fact no play of movement of light, no rippling of shadows to make the patterns come alive; nor is the eye led from one pattern to another, each is set in its own panel with no particular relevance to the adjacent designs. The nearest approach to a play of light comes in the decoration of the engaged colonettes which frame the arched niches that surround the exterior. These have an incised chevron form, sometimes placed horizontally, and do give a slight feeling of movement, but in general the whole building gives a static, monumental quality which is far removed from the elventh century developments. The mausoleum does however make use of stucco in association with the brickwork, particularly

noticeable in the squinches. This is an important technical move in that the stucco is used with the bricks, not to cover them up but in fact to enhance them. This idea is a considerable break with tradition and was to be developed during the next period, although it barely makes more than an appearance at this stage. Whatever the limitations of the actual realisation of the ideas, the importance of the Sāmānid tomb for the history of brick decoration, and of Islamic decoration in general is that brick, its medium of construction, also became its decoration (Grabar 1973:201).

I propose to discuss the three monuments from Isfahan and its region together, that is the Masjid-i Jāmi' and Jurjīr portal of Isfahan, and the Masjid-i Jāmi' of Nāyīn, because they share similar techniques and forms, and retain the same limitations. Thanks to the recent work of the Italians through ISMEO (Galdieri 1973/1:210-14, Pl. XIVb and c;1973/2), some of the columns of the Būyid Masjid-i Jāmi' at Isfahan have been revealed enabling a plan of the Būyid mosque to be drawn, and to show how the original Saljūq structures fitted in to it (Note 3). The Jurjīr portal, all that remains of the great Jurjīr Masjid-i Jāmi' which Smith (1936:314-5) dates to between 366/976 and 375/985, has many of the features which characterise the recently found pillars of the Būyid Masjid-i Jāmi' (Galdieri 1973/2: Pl. 36,39,51,46,47; Hill and Grabar 1967:Pl. 312; Pl. 114-6). The brick patterns of the pillars, although covered with a layer of stucco (Galdieri 1973/2:Pl. 48-9 caption), are formed of the bricks themselves which were specially shaped to obtain a perfect circle (Ibid:Pl. 21-4, caption). The stucco makes no attempt to disguise the formation of the columns, and the patterns are essentially those created by the play of the bricks. Some of the Jurjīr patterns

are of this type, but others are manifestly quite different and emphasize surface over shape by means of stucco (Grabar 1973:194). The designs etched upon the stucco bear no relation to the actual brick construction of the pilasters which they cover (Galdieri 1973: Pl. 46). The most striking example of this is in the Masjid-i Jāmi' in Nāyīn where the sanctuary pillars are covered with stucco as those of the Tārīk Khāna of Dāmghān, but, unlike those of Dāmghān, these columns are perhaps the most richly ornamented with carved stucco of any in Iran or elswhere, while the mihrāb is the most superbly and deeply carved stucco mihrāb in existence (Pope 1964-5: Pl. 265-9). This is using stucco as a surface changer, being as free as possible from the monument's physical properties, and concentrating solely on surface decoration. This of course goes back to the Sasanian use of stucco, and was one of the essential ingredients of early Islamic decoration (Grabar 1973:200). At the same time however, the Nāyīn mosque also contains a number of columns around the sahn which have the same idea as those of the Isfahan Masjid-i Jāmi', that is the patterns are created by the bricks themselves (Pl. 2-4) (Note 4).

Thus in an area of Būyid power in the second half of the tenth century the beginnings of a freedom from the preoccupation with surface for its own sake, having no regard to the actual construction, had appeared, although still inextricably mixed with the older tradition. The Sāmānid mausoleum had shown the way of develop and another monument in the same region, the Arab-Ata mausoleum at Tim showed how much had been achieved in the intervening period.

The Arab-Ata mausoleum (Pugachenkova 1963; Fehervari 1970:712;

Grabar 1973: Pl. 130) is dated to 367/977-8 by an inscription, and represents almost entirely a break away from the surface obsession. As in the Sāmānid tomb, the bricks which form the construction are also the pattern, the stucco carvings being confined basically to the wide-rising joints of the brickwork, with one noteable exception. The basic feature of the decoration is that the bricks are in a simple bond of double stretchers with wide-rising joints, having a raked pattern in those joints. This is repeated in the engaged octagonal colonettes at the angles which have a ficus indica pattern carved in the wide-rising joints, the Tympanum of the portal however has a raked plaster decoration of stars and octagons (Note 5) which covers the brickwork entirely.

This monument is extremely important because it is a dated building, and because it contains a number of developments which had formerly been considered purely of the eleventh century (Note 6). However the Arab-Ata mausoleum is still a building of the tenth century and retains a number of features from that time, particularly the failure to exteriorise the squinches. These are still concealed behind a facade so that the dome appears to rise uncomfortably from the centre of the square with none of the zone of transition visible from the outside. The high pīsh-tāq facade masques the dome from the front, but the side view is less successful (Pugachenkova 1963: Pl. 11-14). This in fact compares unfavourably with the solution achieved in the Sāmānid mausoleum where the dome equally rises from the square form on the exterior, but the corners are surmounted by four smaller domes which give it a more successful composition (Pope 1964-5:Pl. 264) (Note 7).

Thus the tenth century is mainly noteable for its beginnings. The native Iranian feeling for brickwork was stimulated, and there began to develop a feel for brick as a medium in which to execute decorative patterns without the need to conceal it under a different surface. The main centre for ideas was still the west, with inspiration coming from Mesopotamia as it had tended to do under the Sasanians, although already different influences were beginning to creep in from the northeast. The eleventh century saw a complete reversal of this trend with the advent to power of the Central Asian Turks, first under the Ghaznavids, and then under their successors the Saljūqs who continued the traditions laid down by their predecessors. As will be seen, the effect of this reversal of inspiration was revolutionary, particularly as regards design, although the groundwork of the tenth century must not be forgotten. Without this grounding in brickwork technique, it is unlikely that the Iranian masons would have been able to master the complicated patterns which were required of them.

The earliest remaining monument from the eleventh century is the group at Sangbast (Note 8), and in any discussion of the patterns involved it is essential to discuss both remaining structures. Once again both Pope and Schroeder (1964-5:986-8,1275-9) have been constrained to fit the description and technical achievements to the facts as they knew them. If the tower at Ghaznī were really that of Maḥmūd, then an incredible technical step had been taken without the necessary steps to lead into it, but once this is seen as a twelfth century document, then it all becomes much simpler. Undoubtedly a great artistic revolution did take place, and the minaret and mausoleum at Sangbast are the first examples which remain to us from that time, but the group does not constitute an impossible first step in this artistic movement. A new force had appeared on

the horizon, and with it came a new feeling which became apparent in all monuments subject to that influence - the concept of three-dimensionality.

This concern with emphasizing surface over shape has a particularly ancient history in Iran (Note 9) and I have chosen to describe it as two-dimensional. This concept of making the decoration as free as possible from the shape of the object it covers, of making things look different from what they are which Grabar associates with early Islamic art (1973:194) is essentially Persian, and contrasts strongly with the openness of construction which was to characterise the period of Central Asian Turkish domination. A start had been made in this direction with the tomb of the Sāmānid, the raised brick decoration of which had probably some influence on the later Būyid monumental decoration, and this process was continued at Arab-Ata with greater feel for the medium of brick itself as a decorative possibility. In Sangbast a further step is taken in developing the possibilities of brick decoration, by using strong brick fret designs the eye is so drawn along the pattern that the decoration itself seems to move. The great chevron-patterned dome interior actually appears to circle above one's head, and Pope was led to compare the plaster decoration of the lower wall areas to moiré silk from Baghdad (1964-5:1276). The play of strong light and shade is particularly evident in the brick fret design which fills the squinches (Pl. 8-9) and causes the eye to travel along its meander. As Gombrich has shown in Art and Illusion (1968) such a contrast of black and white in a pattern causes the eye to actually see movement, and together with this characteristic of these solidity and openness of construction/form what I have referred to as three-dimensionality.

The minaret itself, while relying on basically simple forms, none of which was really new, uses them in such a way that one is never left in any doubt that this is a solid round surface because of the play the light makes with the bricks. The plain double stretcher bond with wide rising joints which had already been seen in Arab-Ata, leads the eye inevitably to the upper fret section and the muqarnas supporting the balcony (catalogue 3) (Note 10). Fortunately at least part of the upper section is left so that one can appreciate the aesthetic balance between shaft and capital, the slight taper followed by the sudden flare-out of the balcony which would originally probably have been surmounted by some sort of wooden construction, perhaps like that of Simnān. A balance is struck and the whole thing conceived as a unity. It is quite plainly a three-dimensional solid structure, a fact which the decoration emphasizes rather than attempts to conceal.

This linking of the decoration to the structure, making it actually reflect the structure and the method of construction, is demonstrably non-Iranian as a concept, and must be regarded as the Turkish contribution to the Iranian renaissance. Grabar describes the Turks merely as carriers of this Iranian renaissance (1973:213), but I would suggest that they also made this significant contribution without which the direction of this renaissance would have been different.

Sangbast obviously represents only a first statement of this idea and can in no way be regarded as the attainment of a final solution. For one thing the squinches, or 'corner arches' (Jones and Michell 1972:Pl. 9), are masked on the exterior by the extension of the adjacent sides so as to present an irregular octagon to the exterior

(Pl. 8), although the monument has obviously been considerably restored as can be seen by reference to Schroeder's photograph (1964-5:Pl. 260c). The squinch does not make its definite appearance as an exterior form until a few years later at the Davāzdah Imām at Yazd (Pope 1964-5:Pl. 273a) dated 429/1037 (Note 11). Despite these reservations the monument at Sangbast represents a new and important manifestation of this conception of three-dimensionality.

The minaret of Sangbast has the first example of the use of a brick fret design, and for the next group of examples it is necessary to continue along the westward extension of the great Khurasanian road to Dāmghān. This town was one of the major stopovers on the road from Khurāsān westwards, as it still is (Hill and Grabar 1967:59), and contains a number of important monuments. The earliest of these is the mosque of the Tārīk Khāna, one of the oldest mosques in Iran, which has already been mentioned, alongside which is the first example of the fully developed eleventh century minaret, dated to approximately 417/1026 to 420/1029 (Pope 1964-5:Pl. 359) (Note 12). The town also contains another minaret, that of the Masjid-i Jāmi', approximately 450/1058, and two important tomb-towers, that of the Pīr-i ʿAlamdār, 418/1027 (Pope 1964-5:Pl. 339), and that of the Chihil Dukhtarān, 448/1056 (Ibid:Pl.340). The tomb-tower of the Pīr-i ʿAlamdār is an extremely important monument in that it is securely dated by inscription, and is thus the first definitely dated monument of this period, and already has a number of designs and ideas which were to be developed over the next two-hundred years.

Unlike the body of the minaret of Sangbast, the main section of the Pīr-i ʿAlamdār is of single as opposed to double stretchers with deeply raked joints. Originally this entire section was covered

with some form of mud or stucco overlay so that only the raked joints showed as a pattern, even in this section however, it was the bricks themselves which formed the pattern, there is no attempt to mask the use of brick by covering them with a layer of stucco which would then be carved to distort the actual construction methods. Above this lower section are a number of guard-bands which were to form one of the most important and elaborate developments during the Saljūq period. They had already appeared in the minaret of Sangbast (catalogue 3), but in a very simple form, already in the Pīr-i ʿAlamdār they begin to assume some of the intiricacies and complications which were to be such a feature on the minarets of Sāva or Khusrawgird in the early twelfth century,q.v. Above these guard-bands is a major band of the same brick-fret pattern which has already appeared at Sangbast, but in a better state of repair. This is followed by a stylised brick Kūfic inscription which has a number of free-floating upper section 'U' shapes designed to give regularity to the inscription, an idea which appears much more fully developed on the nearby tomb-tower of the Chihil Dukhtarān. A further brick-fret band completes the decoration of the Pīr-i ʿAlamdār.

It is interesting to compare the Pīr-i ʿAlamdār with two other tomb-towers which are almost contemporary, those of Lājīm, 413/1022 (Pope 1964-5:339a), and Rādkān Nīkā, 407/1016-7 to 411/1020-1 (Diez 1918:36,Pl. 1-3). Both are situated in the mountains south of the Caspian, but while the Rādkān example, the more easterly and the earliest of the three, has its splendid inscription framed between very developed carved guard-bands, and has the body of single stretchers with raked joints, whereas the Lājīm tower has neither of these refinements. The Rādkān tower also has a carved brick

flower form set in each of the niches below the roof-line, thus utilising a number of the forms which were to be further developed under the Saljūqs. In neither of these towers however is there any use of the brick-fret pattern which appears on both Sangbast and the Pīr-i Ālamdār.

The brick-fret design makes its first appearance in Dāmghān on the Pīr-i Ālamdār, having already appeared on the minaret of Sangbast, but achieves its perfection on the minaret of the Tārīk Khāna. Here the pattern is felt as an overlay of ribbon pattern, if not actually expressed as such. The pattern is based on a geometric grid, but there is an implication of other layers, there is in fact depth to the design, with all the three-dimensional qualities inherent in such an expression. This is a fundamental break with the traditional two-dimensional occupation with surface, which all too soon reasserted itself. There is of course, a traditional interest in overlay design in Iran, but this is essentially conceived of as a two-dimensional approach as in the stucco strap designs of the sanctuary columns of Nāyīn, but not as in the minaret of Dāmghān, where the idea is strongly felt without in fact existing. This whole idea of layers is later manifested in the complicated arabesque patterns (Note 13). In Dāmghān, where there is this illusion of roping, there is a tension to the surface, with consequent implied movement (Note 14).

As has been established in the chapters preceding, many of the forms which were later to be developed under the Saljūqs had already been established in Iran prior to their arrival, and the same must be said for many of the actual decorative patterns, however both the forms

and the patterns appeared in Iran as a result of the Central Asian Turkish incursion. If the Saljūqs themselves can therefore be shown not to have been the great innovators they had formerly been thought, this is in no way to minimise the extent of their achievement. They were undoubtedly the greatest patrons of all the Turkic peoples, and under their patronage some of the greatest monuments in Iran were erected (Note 15).

The development progression which actually occurred during this period can perhaps best be illustrated photographically, which is done in the accompanying plates, but for the purposes of determining the sort of development which did take place during the Saljūq period in Iran, it will perhaps be sufficient to take one or two isolated examples at different periods and contrast them. I have already written about the minaret of the Tārīk Khāna at Dāmghān which really begins this series, although actually prior to the Saljūq period which in reality does not begin until the second Dāmghān minaret, that of the Masjid-i Jāmi'; my remarks can however be equally taken to apply to the latter minaret. In discussing this minaret I have touched upon the qualities inherent in the brick-fret design upon it. This minaret can well be contrasted with that of the Masjid-i Jāmi' at Sāva, a minaret built some 70 or 80 years later in 504/1110-1 (catalogue 21). This minaret was built at the height of the Saljūq power and shows the mastery of style which had been achieved in the intervening period. The designs themselves are not that different, but the manner in which they are displayed reflects the time which had elapsed. One of the sections which displays the greatest advance is that of the guard-bands. In the earliest period these were simply based on a cast-brick form, such as the triangle, from which the

patterns were evolved. In Sāva these assume an important role, almost a major role in the decoration of the minaret, and are formed of finely carved terracotta (Note 16). These can best be observed by comparing Plates 14 - 17 with 59 - 61, where in particular the developments in the guard-bands is seen clearly.

This particular period, the first few years of the twelfth century, was undoubtedly the highest point in the development of this intricate and wonderfully rich style, as witness a group of Iranian minarets, those of the Sāva Masjid-i Jāmi', Gulpāyagān, and Bistām, as well as the great tower of Khusrawgird. At the same time similar developments had been taking place on the decoration of the tomb-towers, and the end of the eleventh century had seen the towers of Damāvand and Kharraqān (Stronach,Cuyler Young and Stern 1966:1-27), with their fine brick technique demonstrating a rich advance from the earlier towers of Pīr-i ʿAlamdār and Chihil Dukhtarān mentioned above. These led on to the Gunbadh-i Surkh in Marāgha, 542/1147 (Pope 1964-5:Pl.341), and to the tomb of Melik Ghazi in Anatolia, dated to the early twelfth century by Ozgüc (1954:331-40). Contemporary with this group of minarets was that of Dawlatābād, 502/1108-9 (Pl. 118-20), built under the patronage of the Saljūq Sulṭān Sanjar, and the tower of Mas'ūd III at Ghaznī (Note 17), who died in 508/1114-5, both in Afghanistan. These same rich brick-fret designs also appeared on the Ribāṭ-i Malik, dated to c. 1100 (Rogers 1973:221n.19), and the Ribāṭ-i Sharīf 508/1114-5 (Rogers 1973:216n.11). The brick-fret design last appears on an Iranian minaret as an interesting band on that of Zīār, which I have dated to the beginning of the thirteenth century, but here it must be regarded as a deliberate archaism, as Rogers (1973:221) sees that of Vabkent. A related technique makes

its appearance on the Ghorid and Khwarazmian monuments with which a later Chapter deals, but this is a distinct, if related technique, a number of patterns being formed by raised bricks, but these are very different in their complication from the strong simplicity of the earlier brick-fret design (Pl. 121-138). In so far as a progression or development can be assessed the final use on a minaret in Iran is on that of Bistām, 514/1120-1 (Note 18).

Before they disappeared the brick-fret patterns had established a number of designs and patterns which were to appear later in the faience-mosaic decoration, the light and shade of the brickwork being implied by the later multi-coloured forms. These fret designs were also to be seen on a number of levels, patterns being formulated in depth, intersecting lines, spirals or arcs, forming points of departure for new, yet also interrelated levels of multiple design systems. Each of these patterns was also to be seen as a fraction of an infinite pattern, one which moved in every direction, in depth as well as in planes, which must also be regarded as a vision of the universe, part of the infinite Islamic cosmological system. Again it seems necessary to underline the three-dimensional aspect of this particular form of pattern, and to relate it directly to the advent of the Central Asian Turks. How far the art and architecture of a period can be regarded as a manifestation of the spirit of the age, Kunstgeschichte als Geistesgeschichte, is always problematic (Gombrich 1969:25-32), and to take such a small expression of the artistic expression must push the possibility beyond any rational limits, but the possibility must at least be presented, and the historical analogies drawn. This interrelationship in terms of depth in design first appears in brickwork coincident with the emergence of the Central

Asian Turks upon the scene as rulers, and disappears as soon as that situation changed (Note 19).

Throughout this period the flush of 'basket' bonds had continued, albeit much developed from their simple Mesopotamian beginnings at Raqqah and Ukhaidir. These patterns basically achieved their effect by the use of wide, often deeply raked joints to define certain areas of the design. They were characterised by the use of stretchers and soldiers only, without angled bricks to achieve the design as in the brick-fret patterns. Following the analogy propounded above, it is perhaps tempting to see in this the Iranian two-dimensional feeling which preceded and eventually subsumed the Central Asian Turkish three-dimensionality. Although this may be seen as pushing the analogy too far, nonetheless it is certain that it was the Iranians themselves who erected these monuments, and it is in this direction that all later developments moved. It is also significant that the brick-fret designs occur in the north, northeast, Khurasanian area of Iran, whereas the greatest concentration of minarets whose decoration is based purely on the flush bond is to be found in the south, in the region of Fārs, although of course all the minarets under discussion used some form of this flush bond system.

The simplest form of this flush bond is a bond of single or double stretchers with wide rising joints, these joints usually being raked to produce a mottled shadow effect. The next basic form is using single stretchers with wide rising joints, raked so as to produce a pattern of angled bands, disposed to create a diaper of regular lozenges, the field of which can be either stretchers or soldiers. This latter formed the basis for the majority of patterns in use on the minarets of the period, although there were certain unique

designs created on a few minarets.

Mention must be made of the use of stucco as an addition to the brick patterns. As regards the patterns themselves, stucco was mainly used, often in conjunction with terracotta, to form brick-end plugs to decorate the rising joints of the brick bond (Note20). At times these were very elaborate, even including small inscriptions themselves, as in the lower register of the Sāva Masjid-i Jāmi' minaret(Pl. 61), but mainly consisted of a simple repeated pattern, often linked by a connecting line with the rising joint. Stucco was also used to improve the outline of a guard-band by linking the various brick elements, and thereby creating a more recognisable design, as in the minaret of the Kirmān Masjid-i Malik (Catalogue 13). The use of stucco was also of great importance with regard to inscriptions, but this will be discussed in the chapter on Inscriptions.

One extremely important addition to the corpus of decorator's materials was the reintroduction of colour to the exterior of buildings. As has been shown by Wilber(1939:20-1), this idea is an old tradition in this part of the world, dating back to Babylon and Susa, but its reappearance dates from this period (Note 21). The earliest example remaining of the external use of colour is that of the minaret of the Masjid-i Jāmi' at Dāmghān (catalogue 6). Just below the tip of the minaret is an inscription band, so far undeciphered, made of a number of rectangular slabs, each of which contains several letters in relief. The letters are coated with a thin light blue glaze, which has worn off in many instances (Note 22). This is indeed a very simple start, but is considerably earlier than the next possible example, that of the ruined building at Sanjān, which Wilber (1937;

1939:31) dates to approximately the beginning of the twelfth century, where there are small insets of light blue faience set in the brick pattern, a practise that was to be used externally on minarets later in the century as opposed to its internal use at Sanjān. Both examples from Qazvīn, the Masjid-i Jāmi' and the Masjid-i Haydarīya, also use coloured faience to decorate borders internally, whereas the next dated example of external use is on the minaret of Sin (catalogue 25), where the inscription at the top of the minaret has the letters composed of light blue faience pieces. This minaret is dated 526/1131-2 (Note 23), and the next dated use of colour is also on a minaret, that of the Zavāra Masjid-i Jāmi', dated 530/1135-6 (catalogue 29). This example was apparently unknown to Wilber, but it is interesting in that it is the first external use of a dark blue glaze (Hutt 1970/2:178), the first internal use being on the Haydarīya at Qazvīn. This is also the first occasion on which colour forms an integral part of the decoration, although only as a guard-band, not as in Marāgha where, as Wilber points out (1939: 34-5), the material forms an'essential part of the unified decoration of a large surface area.' Later, in both Sabzivār and Ṭabas (catalogue 33 and 34), small tiles, or faience covered bricks were used as grace notes to enhance the main brickwork patterns, as well as being used for the inscription in the case of Ṭabas. The great advances however in the use of colour fall well into the second half of the twelfth, and as I shall suggest, do not form part of the Saljūq contribution. To the Saljūqs however must go the honour of once again using colour as an exterior ornament, and involving it in their main decorative schemes, and idea subsequently developed by others.

Thus in decoration, it is difficult to disengage the Saljūq contribuiton

from that of the Central Asian Turks as a whole. Many of the forms, patterns and designs were already there, but they were developed and moulded in a most creative fashion by the direction of the Saljūqs themselves who were undoubtedly interested in their vast building programme, but, as in the case of colour, certain innovations were directly brought in under their direct rule in areas which they controlled. A full analysis of the Saljūq contribution will be included in the conclusion (Note 24).

Chapter VII. Notes.

1. There are no fixed dates for the construction of the Isfahan Masjid-i Jāmi', and so far there has been nothing to prove that the excavations have revealed the Būyid mosque, but all evidence points that way, and in the circumstances I have accepted the suggested dates. The Jurjīr portal is in exactly the same position, but again on stylistic grounds, if on no other, such a date as I have suggested would be acceptable.

2. It has also been suggested that the two mausoleums at Samirān (Willey 1963:Pl. facing p.81 and 97) are also of Būyid date. The eastern mausoleum has a ruined inscription, but apart from that no other decoration, while the main mausoleum, although it has certain architectural features, such as engaged corner columns and blind niches on the sides, has no other distinctive features which would be of help in this study, and so I have chosen to leave them both out of the present discussion.

3. Galdieri's reconstruction of how the south dome chamber fitted into the sanctuary (1973:fig.10) is a complete vindication of Godard's 'kiosk mosque' idea. It also shows how the dome chamber was meant to be viewed in its entirety, with all the workings of the dome construction exposed. The subsequent erection of the frontal īvān could be seen as a concealment of this naked construction.

4. Unfortunately these brick columns have recently been cleaned and restored which, while revealing the brickwork patterns more clearly, has also removed any traces of stucco filling in the form of brick-plugs which might have been expected.

5. In a private communication, Dr. Whitehouse has informed me that this star and octagon pattern is to be found in Sīrāf on plaster work dating to the tenth century, and not to the eleventh as suggested by Rogers (1973:223). Whitehouse suggests that the merchants of Sīrāf were so rich that they were able to afford the latest designs, wherever they might be found, and therefore it would not be surprising to find a design which first appears in Central Asia, translated so quickly to Sīrāf on the Persian Gulf.

6. In particular the tri-lobed squinch. Prior to the knowledge of this building the earliest example of the trilobed squinch had been presumed to be that of the Duvāzdah Imām at Yazd dated 429/1037 Pope 1964-5:Pl.273-4). Apart from the possible exception of Ribāṭ-i Māhī, where I have elsewhere tried to show the development of such a squinch (Hutt 1970a:Pl.Xb,205), and which is also exteriorised, the Yazd example is the first one of the exteriorisation of a squinch. The Sasanian squinches, which I have not discussed here, were not exteriorised.

7. This solution is very similar to one which was to be pursued in India, the central dome being supported by four chatriyas, small domed pavillions. The most famous example is the Tāj Mahal, but its beginnings can be seen under the period of the Delḥi Sultanate.

8. In the absence of concrete arguments to the contrary I continue to refer to this as being of the time of Arsālan Jādhib. I note that Hillenbrand is also apparently not convinced of the later date given for this monument (1972:45n.6).

9. In particular the Persepolitan carvings which are concerned

predominantly with surface. They ornament the exterior of the building, but if they were removed it would do nothing to change the essential fabric of the buildings. While they utilise the spaces on the buildings, there is no suggestion that they are more than an ornament on the surface. This can be contrasted with the Greek sculptures of the Parthenon, which are essentially more than ornament applied to the surface, nor do they seek to change the surface, but emphasize it.

10. The supports to the balcony in Nāyīn cannot be described as muqarnas, and therefore those of Sangbast would be the earliest on an Iranian minaret, but the form is already developed by the time of Simnān, and may equally have been so in Dāmghān, but the tops of both minarets are missing. It became a feature of Iranian minarets, and the superb example of Sarabān in Isfahan is probably the finest in existence.

11. See note 6.

12. The captions of the two plates are reversed, a mistake which has been followed in Hill and Grabar (1967:Pl.196 - 197).

13. This overlay is carried to extremes in carpet design, particularly with the more complicated carpet designs, see the analysis by Grant Ellis (1964-5:3172-83).

14. The idea of pattern is inseperable from a sense of the unity of all things in Islamic philosophy. This sense of balance led al-Bīrūnī to posit the existence of another continent to balance the earth, and led Ibn Sīnā to the idea that space and matter are

indivisible, but at the same time both matter and beauty are in a constant state of flux and movement. Thus Nature, the supreme architect, and movement are closely related to the idea of Soul and order. It was manifestly impossible to translate all these ideas into architecture, but the need to show movement and form appears to have been strongly reflected in the patterns achieved.

15. This achievement was also effected in a surprisingly short space of time, between the battle of Dandāqān, 431/1040 and the second half of the twelfth century when it already becomes difficult to label many buildings as Saljūq, although in many places the traditions continued until they were overtaken by the new impetus which once again came from the northeast.

16. The first examples of this carved terracotta guard-band form are contained in the guard-bands which frame the inscription band in Rādkān Nīkā (Diez 1918:Pl.3).

17. Judging by the early photograph of the Ghaznī tower (Schroeder 1964-5:984 fig.337), there was a balcony at the height of the present stellate base, and it is probable that the tower was used for the adhān, and was therefore a minaret as I have defined the term. This has, however, been debated, and until a mosque is found which it might have served, the question must remain unresolved.

18. Rogers also refers to the porch of the tomb of Jalāl al-Dīn Husayn at Uzgend (1152) and the Mausoleum of Sanjar at Marv, which is almost contemporary (1973:221) as having the same brick-fret design patterns. Certainly the style must have continued in use

for some time, particularly in this area, but it does not seem to have been used on minarets later on except as a deliberate archaism.

19. It is possible that some of this must be linked to the fact of the Sunnī revival which was instituted by the advent of the Turks. It may also be significant that much of this occurred during the lifetime of al-Ghazālī who died in 1111. However this must remain supposition until all relevant documents can be sifted.

20. One of the finest examples of the use of stucco in connection with brickwork is in the Qal'a-yi Bist arch in Afghanistan (Pope 1935: 7-11). The underside of the arch has a pattern of stars and polygons in brick strapwork, the ground of which is filled with a most intricate design in carved stucco, combining both naturalistic and geometrical forms. This arch probably dates from the twelfth century and represents considerable Saljūq influence on this rebuilt Ghaznavid structure.

21. I would suggest that the green domes described by earlier Islamic writers as beautifying the various palaces, notably that of Baghdad (Wilber 1939:23), may in fact have been copper domes which would inevitably have turned green, although it is possible that they refer to green tiles as Wilber suggests. It is however notable that the first colour which makes its appearance as external decoration that has come down to us, is a light turquoise blue, and not green as might be imagined had there been a tradition of this colour. The dome of the mausoleum of Sulṭān Sanjar at Marv is probably the first example of a tile covered dome since this is described as being blue (Wilber 1939:23n.25).

22. Rogers (1973:225n.27) suggests that the glazed tiles on the Dāmghān minaret may in fact belong to a later Il Khānid restoration, however until a complete analysis can be undertaken of the tiles in question it strikes me as useless to speculate. As they are they represent a very early date, and a tradition which was not continued, since the future development lay with the use of glaze on cut or moulded single bricks, and not as a complete covering for a tile. If they are post the construction of the minaret then they must have replaced some similar band of decoration since the present band fits the decoration perfectly, and it is unlikely that the entire upper structure would have been restored in Il Khānid times with such a brick fret design (Pl.15).

23. Apparently the Kalyān minaret in Bukhārā has an earlier use of faience glaze externally. This is dated to 1127, and therefore antedates the Sīn example. Rogers was apparently misled by the date of the Sīn minaret which he attributes to 1121 and not 1131 (Rogers 1973:225).

24. A number of attempts have been made to analyse Islamic patterns, the most recent of which by Albarn (1972:1-8) has used as its basis a system based on Vedic Mathematics (This term was used by Jagadguru Swāmī Śrī Bhāratī Kṛṣna Tīrthajī Mahārāja, Shankaracharya of Govardhana Matha, Puri,in his book 'Vedic Mathematics', Varanasi 1965). For the purposes of this thesis such analyses, while of interest, will not show any significant development of the patterns employed, since whatever the medium used, the patterns employed by the Central Asian Turks upon their conversion to Islam and their advent into the Iranian world as rulers, were still Islamic patterns, and as such based on principles which were, and always have been universal for the Islamic

world. While such analyses may be of assistance in reconstructing a number of the patterns involved I have therefore chosen not to apply such analyses to the patterns with which this thesis is concerned. I have drawn a number of the patterns involved so that the module from which they are composed can be more easily apprehended than from a photograph, but until one system has been recognised as authoritative, I have felt it more important to provide the material from which eventually such an analysis can be drawn, than to attempt a research which must at present be inconclusive.

## Chapter VIII. Inscriptions.

Of the minarets under discussion, more than half have inscriptions on them forming an integral part of the decoration. The majority of these inscriptions are either Qurānic or simply contain one of the religious formulas, but nine of them are actual historical inscriptions which give a date for the foundation of the minaret. Another one, that of Bistām, is bonded into a mosque wall which is itself ornamented with an historical inscription giving the date.

It is not part of the intention of this thesis to deal with the various aspects of epigraphy involved in a detailed discussion of these inscriptions. I merely wish to discuss some of the decorative problems involved and to list the relevant minarets. Where possible I have included a translation of the inscriptions, which will be found under the appropriate entry in the catalogue.

Many of the inscriptions were originally much easier to read, in that the simple brick forms of which they were made were clad in stucco, linking the bricks in a much more intelligible form. The minaret of the Masjid-i Pāminār at Zavāra (catalogue 8, Pl. 23) demonstrates this perfectly since one side of the minaret has been exposed to the elements and all traces of the stucco have gone from the inscription and the 'bead' guard-bands which framed it, whereas one section has been sheltered and the stucco infill is still intact. This consists not merely of a stucco link between the bricks of the inscription, but also a full arabesque and vegetal background which fills the entire band and creates a very rich feeling. It is difficult not to believe that the inscription of the Masjid-i Maydān

at Sāva (catalogue 7, Pl. 20) was similarly decorated, with the addition that a number of the background decorations also had a basis of carved brick, which still remains, and these would have been linked to the letters by a stucco infill (Note 1).

Pope (1964-5:1279) criticizes the script used in the minaret of Simnān as being weak and unarchitectural, an opinion with which I concur, at least when the inscription is looked at in its present state (Pl. 13). As is apparent from the contents of the inscription (catalogue 5), this minaret was built by the same man who built the minaret of the Tārīk Khāna at Dāmghān (catalogue 4), although there is no indication as to which is the earlier. The Damghan inscription uses many of the letter forms which appear in the Simnān example, but at Dāmghān (Pl. 10) there is no stucco infill at all, whereas in Simnān the letters themselves are outlined with stucco but there is no background infill of stucco pattern. In my opinion the present plaster covering of the Simnān inscription is a later restoration and originally there was probably a more important stucco revetment which would have created a more acceptable design. The present state makes it appear much worse than the completely clear Dāmghān example, to the general detriment of the minaret decoration. There are a number of what I would term 'floating finials' in brick or terracotta in both sets of inscriptions, and by analogy with other inscriptions of the period, these would have been linked, if only tenuously, to the main inscription, presumably by a stucco infill (Note 2).

In the same sentence Pope also castigates the Bistām inscription for the same reasons. A close examination of the area around the

inscription band (Pl. 68) reveals traces of stucco which has now almost entirely disappeared. While I would agree that in their present state many of these inscriptions appear to lack the quality of other monumental inscriptions, they should not be judged on purely aesthetic grounds, lacking as they do, an integral part of their original background. Since inevitably the stucco overlay and infill for the inscription was thicker than on other parts of the exposed decoration, it is more likely to have fallen away in its entirety, and consequently, unless somehow sheltered from exposure, most inscriptions from this period are in this unhappy state. A superb example of an inscription which has remained in its original state, at least in part, is that of Dawlatābād in Afghanistan (Pl. 120), showing how the early twelfth century examples originally looked.

Certain minaret inscriptions were basically constructed from brick only against a brick background, such as Barsiyān (catalogue 17, Pl. 45), or, as far as can be judged after the recent restoration, Gulpāyagān (catalogue 19, Pl. 50-1) (Note 3). Others, such as that of the Masjid-i Jāmi' at Sāva (catalogue 21, Pl. 59-61), made considerable use of carved or moulded terracotta inserts and a minimal stucco or mortar link between the moulded bricks which formed the actual inscription. In this particular instance I am surprised not to find any traces of a stucco background to the letters because in the lowest band there are a number of stucco plugs and infills which are extremely finely carved(Note 4), and I would have expected a similar sort of background for the inscription. The delicacy and expertise however with which the carved terracotta is used throughout the minaret more than compensates for any lack in this direction, and perhaps gives the inscription a force which it might

otherwise lack.

A further inscription type which occurs on the minaret of Gar (Pl. 71) is an early example of the use of the flush bond system using single stretchers so disposed that the wide rising joints form a 45 degree diagonal diaper to form an inscription in seal script or rectangular Kūfic (Note 5). This is not quite the same as the way in which this seal script is formed on the eastern Kharraqān tower (Stronach, Cuyler young and Stern 1966:Pl. VIIa) where the letters are formed by the individual bricks being angled at 45 degrees in either direction in alternate rows, with the result that the inscription is read vertically and horizontally. This example is dated 460/1066-7, and the next example of a similar style is on the tower of Mas'ūd III at Ghaznī (Hill and Grabar 1967: Pl. 148). Here again the inscription is composed by the bricks only, but this time the bricks are stretchers and soldiers disposed in a diagonal pattern so that the inscription is read diagonally. This last example is dated between 1089 - 1115.

While it may be argued that the end result is the same, seal script or rectangular Kūfic, there are here three different methods of achieving the end result, and a fourth one first occurs in the Ulu Çami at Mardin (Altun 1971:Pl. 37) where the seal script is carved in stone. The inscriptions which decorate the shafts of the minarets of 'Alī and Sārabān in Isfahan use the form started at Gār, except that the wide rising joints are not filled with stucco brick-end plugs but are raked to create the effect by means of shadow. In Shushtar (Pl. 108) the other method is used, but the soldiers which form the inscription are replaced by bricks covered with light blue

faience; one of the examples of the takeover of brickwork by colour.

The fact that these different methods were tried out to achieve a similar result demonstrates the interest in technique at this time, but also underlines the fact that, while the techniques might be different, the actual patterns involved were the same. The only new thing was the use of this 'seal script' or 'rectangular Kūfic' as an architectural decoration, which must be counted as a further Saljuq innovation.

As has already been mentioned in a previous chapter, it is to this period that we owe the introduction of coloured faience to the exterior decoration of buildings. The glazed tile inscription on the Dāmghān Masjid-i Jāmi' (Pl. 15) had no followers which have survived, but the inscription on the minaret of Sīn (Pl. 73) showed the direction along which future development would occur in future. I have described this inscription (catalogue 25), but would like to repeat the salient points. The inscription is formed of bricks, glazed on the outer face only. Smith (1936:331) refers to this as a 'glazed brick faience mosaic', which I feel is too strong a term, although as a precursor of the later faience mosaic inscriptions it has a certain appositeness. The bricks forming the letters were first moulded or cut to exact proportions and then glazed on the one face. There are traces of glaze over the edges of the letters, proving that they were not cut from large glazed tiles, as was sometimes the case. These letters are all in a very simple straight form of Kūfic, the letters being almost identical in shape with those which form the inscription on the square base. The comparison

between the two sets of inscriptions is perfectly illustrated by Wilber (1939:33, fig.7), where the almost archaic simplicity is evident (Note 6).

The next minaret example, that of the twin minarets of Ṭabas (catalogue 34, Pl. 90-1), shows considerable development in the actual form of the letters, with a number of more elaborate finials, including a number of 'floating' ones, whose irregularity would argue for some form of local manufacture. At the time of his inspection, Wilber (1939:37n.65, fig.15) was unable to ascertain whether or not the pieces had been cut from a larger tile which had already been glazed, or whether they were specially moulded and then glazed. With the aid of my telefoto lens I was able to assure myself that in many places the glaze did run over the edges of the letters, indicating that they were first moulded and then glazed.

In his article on Ardistān and Zavāra, Godard (1936:298n.3) refers to the small mosque of the Imām Ḥasan at Ardistān (catalogue 35, Pl. 92), and says that it carries inscriptions in Kūfic characters enamelled turquoise blue on a ground of plaster scrollwork,'as do the minarets of Tabas'. This would suggest that the Ṭabas inscriptions had a carved stucco ground which has, of course, now disappeared since the recent restoration (catalogue 34). Unfortunately such a ground is not at all visible in the photograph published by Godard (1936:300 fig.197), nor is it mentioned by Wilber (1939:37n. 65) in his description, although he was able to visit the site long before the recent restoration. Certainly one would have expected there to be some form of background decoration, but it is unfortunate

that neither author mentions it in detail, nor shows it in any of the photographs or drawings published.

The reference to the surviving minaret of the Imām Ḥasan is also slightly misleading in that, even at the time of Godard's photograph (1936:299 fig.196), when considerably more of the minaret was still extant, I can see no trace of an inscription zone on the actual minaret, as on those of Ṭabas, although the portal itself, and those parts of it which are actually bonded into the minaret, do bear interesting inscriptions. Close examination of these inscriptions however suggests that they might form part of a later restoration. The script itself is quite a simple Kūfic, but has an elegance about it which certainly does not accord with the much clumsier form of the Ṭabas inscriptions, although lacking their foliate pretensions. Set as it is against a finely carved plaster scroll background it suggests to me somewhat later workmanship, perhaps a later portal addition to the original Madrasa, which I have elsewhere suggested to be of late twelfth century workmanship (Hutt 1970/1: 203-4).

Of the minarets under discussion in this thesis only four others have inscriptions in colour, those of 'Alī and Sārabān in Isfahan, and Zīār and Rahravān in the neighbourhood of Isfahan (catalogue 36, 37,39 and 40). Although I have included all of these minarets within the twelfth century period, this dating is not altogether certain. The indications are that they probably fall within the period prior to the Mongol invasion, although, as I hope to demonstrate, this does not necessarily imply that they fall within the Saljūq period. None of these four minarets however show any indications

of the important stylistic changes which took place in the eastern areas of Iran during the second half of the twelfth century, for which reason I have chosen to include them. The most easterly point which these stylistic changes reached appears in the early thirteenth century minaret at Nigār (Hutt 1970/2:178-80), a change which is particularly noticeable in the inscription (Pl. 143-4), which represents an extraordinary advance, and manifestly does not therefore, fall within this period.

Inscriptions, and the art of calligraphy generally, occupy an extremely important place in Islamic culture. No discussion of any aspect of this many-faceted world can fail to take this into account, and much has been, and will be written on the symbolical link between the 'word' and the deeper levels of religion. I have already mentioned the close link between the 'word' and 'light', and have suggested that this may have been one reason for the association between mi'dhana and manāra. I would now like to carry this analogy one stage further in suggesting that the act of implanting inscriptions onto the fabric of the minaret is a further example of this association. By means of the religious texts on the shafts of the minarets, they were proclaiming the word of God at all times of day, even when the adhān was not being given. In whatever way it may be possible to analyse the composition of the script, etc., the fact that the inscriptions exist is a sufficient fact in itself, and one of which the various rulers who constructed them must have been aware. By adding their own names and titles to the inscriptions which adorned the minarets, making them into commemorative columns as suggested in a previous chapter, they, as it were, enjoyed a second proclamation of the khuṭba, a further instance of the way in which Islamic sovereignty was displayed.

Eleventh and twelfth century minarets having dated inscriptions.

| | |
|---|---|
| Sāva - Masjid-i Maydān | 453/1061-2 |
| Zavāra - Masjid-i Pāminār | 461/1068-9 |
| Kāshān - Masjid-i Jāmi' | 466/1073-4 |
| Barsiyān | 491/1097-8 |
| Isfahan - Chihil Dukhtarān | 501/1107-8 |
| Sāva - Masjid-i Jāmi' | 504/1110-1 |
| Khusrawgird | 505/1111-2 |
| Gār | 515/1121-2 |
| Sīn | 526/1131-2 |

Twelfth century minarets having coloured inscriptions.

| | |
|---|---|
| Sīn | 526/1131-2 |
| Tabas - Madrasa Daw Manār | second half of twelfth century |
| Ardistān - Masjid-i Imām Hasan | " " |
| Isfahan - Manār 'Alī | " " |
| Isfahan - Manār Sārabān | " " |
| Zīār | " " |
| Rahravān | " " |

Chapter VIII. Notes.

1. An important example of this which has already been mentioned is that of the minaret of the Masjid-i Malik in Kirmān (catalogue 13, Pl.33-4).

2. I have used the term 'floating finials' to indicate those sections of the inscription which are purely ornamental, not being directly linked to the upright stroke of any of the letters but having an aesthetic function to balance the balance formed by the script. These later became more complicated and finally regularised so that the upper section of the inscription had a regular pattern which might be totally divorced from the rhythm of the actual inscription itself.

3. In this respect the minaret of the Chihil Dukhtarān, Isfahan, must also be considered within this group, in that the lowest inscription, that on the plinth (Pl. 56), is also set against a brick background, which has a design slightly more advanced than that of Barsiyān (Pl. 45). It too contains one of the first panels of naskhi inscriptions, a slo against a plain brick background (Pl. 56), and an upper inscription (Pl. 54) exactly similar to that of Barsiyan. I have not included it in the text because on so many accounts, particularly with regard to the overlay decoration on the shaft, the minaret of Chihil Dukhtarān is unique. At some stage when full archaeological investigations can be made around the base of this monument and in the adjoining area, much of which is still not built upon, it should form the subject of a seperate monograph. At the moment it suffices to note some of the details as they occur within the scope of this thesis and have relevance to the main theme (catalogue 20).

4. Some of the stucco infill decoration on the minaret at Sāva is an interesting study in itself, many of the brick-end plugs which are used in the inscription (Pl. 61) having small inscriptions on them, usually 'Allāh'. The study of brick-end plugs, and their development, the many varied types, etc., has already been touched upon by Pope (1964-5:1289 fig.467), but still remains to be explored.

5. It is on the minaret of Gār that Smith (1936:323 n.4) referred to the script as 'rectangular naskhī' following Herzfeld. While the wide rising joints of the plinth have the brick-end plugs to decorate the joints, the similar formation on the shaft makes use of shadows only, as later on in 'Alī and Sārabān.

6. This lower inscription was entirely cleared by Smith, photographed, and then translated by Madame Y. Godard (Smith 1936:363-4).

## Chapter IX. End of the Saljūq Period.

It will have become evident in this thesis that I have been exercised by the problem of exactly how to define the period which has been termed the 'Saljūq' period. This thesis is solely concerned with developments in Iran, although peripheral areas, particularly those now encompassed by Russian Central Asia and Afghanistan, have of necessity been drawn into the discussion. However since part of this thesis is concerned with the achievement of the Saljūqs, it is important to set bounds to the actual period involved. For the beginning of this period I have chosen the battle of Dandānqān in 431/1040, accepting the fact that this is an arbitrary choice; it does however mark the transfer of power from the Ghaznavids to the Saljūqs in Khurāsān, perhaps the most important Iranian province. Artistically, as has been shown, this date does not usher in a new era, but is simply a point on the development curve of a style which had its inception at the end of the tenth, beginning of the eleventh century with the arrival of the Central Asian Turks in a position of sufficient power to be able to direct the artistic expression of the area. While it would be equally impossible to fix a definite date for the actual beginning of this whole development, at least prior to 431/1040 the Saljūqs themselves cannot have been in this position, whereas after that date they in fact ruled the area, even if it would be ridiculous to see them in personal charge of every monument built since that time. Thus arbitrarily the first of the minarets with which this thesis is concerned which can be counted as having been built in the Saljūq period is that of the Masjid-i Jāmi' at Dāmghān, all others must be counted as pre-Saljūq, but as forming the extremely important base

upon which the Saljūqs were to build.

If the problem of the beginning of the Saljūq period has to be settled in such an arbitrary fashion, how much more difficult to decide on a terminal point. Obviously this could again be settled by choosing some arbitrary historical date, but as I have tried to show, the Saljūqs appeared at a point along an already developing artistic curve, and while I am concerned to demonstrate the actual Saljūq contribution within that curve which became inextricably associated with their name, I have also discussed the origins of this particular curve. It is at the point of emergence of a new curve that I have chosen to end the Saljūq period. Again this cannot be linked with any specific date or place, but in the following chapter I have attempted to enumerate and describe the monuments which I feel characterize the new period, and to explain how they differ from those of the 'Saljūq' period. It has been customary to continue the period of the Great Saljūqs until the advent of the Mongols in 1220, calling the later period that of the Atabegs, but artistic history rarely revolves around the same fixed points as political history, and , as I shall demonstrate, the new artistic period began before the Mongol conquest, and continued after it.

Although historically and dynastically the Saljūqs may be said to have lingered on until the end of the twelfth century, at least in western Iran and Iraq, major stylistic changes had already occurred in the area which I shall label Greater Khurāsān in the second half of that century, which, although in many ways having their basis in the earlier twelfth century forms, were of such a revolutionary character, and drew their inspiration from such diverse areas, that

they can no longer be called'Saljūq'. New brick and stucco patterns appeared, combined with an increased use of colour in exterior decoration, and these continued basically unchanged until the end of the thirteenth century, despite the apparent break caused by the Mongol invasion.

In the preceding chapters I have described the various brick and stucco patterns which were already in existence in the eleventh and twelfth centuries, but these then develop a greater freedom and fluidity of movement compared to the earlier more hieratic style. These developments were foreshadowed in the rebuilding of the great Ribāt-i Sharīf in 1150. This event can in many ways, be taken as the moment of emergence of the new styles, so that once again it was the northeastern area which provided the necessary impetus (Note 1). Another wave of Indian and Central Asian influence interacted with the previous styles to produce the later gloiries of the fourteenth century. As has already been mentioned, colour made its appearance in the first half of the twelfth century (Note 2), although still in a very simple form - grace notes to a brick symphony - but this hardly prepares one for the superb Ghurid and Khwarazmian use of the medium.

I have already suggested that the Saljūqs merely continued along lines which had been laid down by their predecessors, developing and amplifying what they had received. In the same way I would suggest that the Ghurids and Khwarazmians constructed on the work achieved under the Saljūqs, but that their advances and achievements were equally as important for the subsequent development of architecture in greater Iran as the Saljūq achievement. Inevitably an important historical event such as the Mongol invasion tends to

overshadow the more insubstantial growth of artistic history, and it is always easier to associate the end of a political epoch with a major cultural change.

In so far as I have been able to pursue my own investigations, I would suggest that this particular political upheaval had relatively little effect on the growth of architectural and artistic styles other than to move them west at a far greater rate than would have been achieved by more natural progress (Note 3).

I would like to illustrate my point about the developments in Greater Khurāsān by analysing a number of monuments from the second half of the twelfth century including the period prior to the Mongol invasion of 1220, and thus to attempt to show how important was the revolution which took place. I will therefore start with the minaret of Jām, perhaps the most incredible of all minarets ever erected (Note 4).

The minaret was built in the last quarter of the twelfth century under the Ghurid Sulṭān Ghiyāth al-Dīn Muḥammad, as is attested by the foundation inscription (Maricq 1959:27). The side panels of the octagonal base are entirely covered in an inscription in plaited Kūfic (Pl. 122), the finials of the letters being formed of vine leaf patterns set in curving tendrils (Note 5). The central knots which form the plaited band have a new and unusual complication, displaying a mastery of technique and design hitherto unsuspected. There are three main designs of knot. The first consists of two interlocking triangles, the apices of which connect respectively with the letters of the inscription and the finials. The central

knot type, which in a modified form is also used at each of the corners, is formed of two interlocking 'S' shapes, the ends of each 'S' being connected with the letters and the finials. At the corners, these 'S' forms have been seperated to make two heart-shaped designs, which are then in turn connected to the letters and the finials. The third knot is more complicated in that the uprights of the letters continue directly through the knots, but are interlaced between a square and a horizontal oblong, each of which has rounded corners. The whole inscription, which is of stucco, is raised considerably above the plain brick background, so that the play of shadow causes the inscription to stand out dramatically, an effect which is heightened by the fact that each of the bands forming the inscription is deeply scored close to each side, giving a shadow play within the letters. The edges of the vine leaves are also raised for the same effect, while the body of the leaf is pitted. A basket-weave band between guard-bands of soldiers completes the decoration of the base.

Above this base the lower section of the minaret is entirely covered with an inscription conatining the complete sura of Maryam, sūra 19. This inscription, which is in simple foliated Kūfic, is made of brick, and winds around a number of geometrical forms, the interiors of which are filled with a series of brick patterns. These represent a considerable evolution from the earlier patterns, and were subsequently to be used in a number of monuments in this area. This applies particularly to a design of interlocking hexagons, a series of interlocking circles, and a square within which is set a rayed circle-octagon having a hollow centre. This last pattern almost becomes a hallmark of the period and was subsequently translated into stone in Anatolia (Pl. 123) (Note 6).

The inscription band is also accompanied by another band having a tasselated pattern, possibly derived from a lotus design and therefore perhaps originating in India. This pattern, in a double version, is then used as a horizontal band to terminate the inscription section. Above this is a series of large roundels with a stucco or brick pattern inside, set against a honeycomb stucco ground. The blue faience foundation inscription is set between two guard-bands of blue faience beads, each bead being formed of two segments of a circle seperated by two rectangular pieces - a considerable advance on the simple stucco-filled semi-circular bricks used un the eleventh century, as in Kirmān (catalogue 13, Pl. 34). The finials of the letters are decorated with vine leaves set in tendrils, similar to those of the base inscription but made of blue faience. Three rows of this vine leaf pattern in stucco complete the decoration of the minaret to the height of the first balcony (Pl. 124).

Between the first and second balconies are four further bands of decoration, two being brick inscriptions in foliate Kūfic set between guard-bands of beads, the others decorative brick patterns, one of which finds no parallel in other Islamic monuments, with the exception of the upper decorative band of the minaret of Bistām (catalogue 23, Pl. 68). This is a possible precursor, but which in any case would seem to indicate an Indian influence (Pl. 124). Above the second balcony below the crowning cupola is a further inscription band in foliated Kūfic, again set between guard-bands of beads (Note 7).

This minaret, which I have described in such detail, represents in a number of ways so many of the innovations to which I have referred

as originating in the latter half of the twelfth century, although there are still a number of patterns which can be traced back to earlier eleventh and twelfth century originals. Certain forms however, particularly the strongly raised inscriptions, certain of the brick patterns which I have indicated, the use of colour for the inscriptions, and the great roundels filled with brick or stucco designs, represent new ideas which were to continue thoughout the thirteenth century and serve as the coundation for the fourteenth century developments.

There are certain other Ghurid monuments of this period which are also important in the general development of pattern technique, one of which is the Ghurid portal of the Masjid-i Jāmi' at Herat. As it now stands, the uppermost portion of the portal is missing, and a later arch has been inserted below the original Ghurid arch, the decoration of which is therefore partially concealed (Pl. 126). The flanking inscriptions however, are almost complete, as is much of the interior decoration of the arch. The blue faience inscription represents an advance in technique on that of Jām. It is set below guard-bands of alternate bead and knuckle-bone design, certainly extremely common in the earlier period, but here for the first time it is executed in blue faience. The letters themselves are in simple plaited Kūfic, but with no attempt to achieve regularity in the placing of the knots, unlike the base inscription at Jām, although that was executed in stucco and this in faience. The finials however, are absorbed into a continuous decorative band of considerable complication, again perhaps owing something to Indian influence. The whole inscription is raised against a stucco ground in a swag design remeniscent of the lotus pattern already

remarked at Jām. As far as I have been able to ascertain this is the first example of a monumental blue faience inscription framing a portal (Pl. 125) (Note 8).

The inner side of the portal (Pl. 126) contains a raised brick pattern of interlocking circles and squares between guard-bands of a double knuckle-bone pattern, a device already remarked at Sava Masjid-i Jāmi' and Khusrawgird (catalogue 21 and 22, Pl. 60 and 65). The spaces between the brick interlocking pattern are filled with blue faience bosses, while the angles of the portal have attached colonettes having an all-over brick design and a short inscription as the capital (Note 9).

The interior of the arch was apparently covered in carved stucco muqarnas (Pl. 126). This, while it again looks back in outline to the form of muqarnas which decorates the balcony supports of Bistām (catalogue 23, Pl. 67), has much more in common with the rich muqarnas which decorates the great mihrāb at Farūmad (Pl. 142). Bistam, with its muqarnas of cut brick overlaid with stucco, is still hieratic and early twelfth century; the muqarnas at Herat already has the deeply carved flowing line which is usually associated with the more florid Il Khānid style, but which appears in full expression much earlier in Farūmad (Pl. 141-2).

There are two mausolea at Chisht(Maricq 1959:Pl. VIII and IX), of a similar period, having many of the same patterns which have already been remarked on the minaret of Jām, and the smaller of the two uses exactly the same lettering as that of the Ghurid portal at Herat, with the same design for the finials, although this time in brick not faience (Pl. 128). The larger mausoleum has the same

motif noted at Jām as possibly deriving from the Indian lotus pattern. Again this is used as a seperation band between two brick patterns and, in an enlarged form, fills the semi-dome of the niche (Pl. 128). Unlike the Herat portal however, it does not fill the ground of the inscription which instead, is filled with rows of inverted equilateral triangles in a form of dog-tooth ornament (Note 10).

Apart from the minaret of Khwāja Siyāh Pusht, which has already been remarked because of its flanged base, there is another Ghurid minaret from the twelfth century which should be mentioned, that of the Quṭb Minār at Delhi (Brown 1964:fig. 1 and 2). Dated 1195, it was build by the Quṭb al-Dīn Aybak (Note11), and has a number of points of resemblance to the other late twelfth century minarets. The alternate round and angular flanges have already been discussed in a previous chapter, but as might be expected, it also has the tasselated design referred to as possibly deriving from the Indian lotus, and also a band of small roundels with an open flower-patterned centre (Note12).

I have not been able to make a personal study of the Khwarazmian monuments in Russian Central Asia, but the group of buildings at Mashhad-i Misrīyān is obviously extremely pertinent to this discussion (Note13 ). From the publication by Pribitkova (1957:143-8) it would appear that the portal had a monumental blue faience Kūfic inscription framing it. This inscription appears to have the same finial pattern which has been remarked in both Herat and Chist (Pl. 125 and 128), but the knots of the plaited Kūfic have now been regularised to form a hollow 'X' shape (Pribitkova 1957:146 fig.5). There appears to be no background design, the letters rising directly

from the plain brick. On the inner edge of the inscription panel, and running above the portal, is a design band of an octagon superimposed above an open cross, in turn over an open 'X' form; the whole enclosed within a square. This would seem to derive from some of the earlier Khurasanian brick patterns via those of the minaret of Jām. The innermost band seems to be a form of arcading for which I can find no parallels. The inner edge of the arch again has a flowing inscription against a deeply carved floral arabesque as in the Herat example. The inner surface of the lower section of the portal is covered with a thin layer of stucco on which a brick design has been cut, bearing no relation to the structural brick background (Ibid:147 fig.6). Although the pattern so cut is a common one on eleventh and twelfth century minarets in Khurāsān, the emergence of this technique represents the end of detailed brick patterns and was widely practised in later Il Khānid times. It in fact once again represents a return to the interest in surface as opposed to structure, and with this resurgence, the brief three-dimensional period is over and there is a return to the Iranian idea of two-dimensionality, which enables basically inferior construction work to be covered by a surface ornament and so disguised.

This lower wall is surmounted by an inscription band above which is a rich central panel of elaborately carved stucco (Ibid: 147 fig.6); the quality and feeling behind the carving on this panel leads directly to the Il Khānid style, as exemplified in the early fourteenth century Masjid-i Jāmi' at Varāmīn (Hill and Grabar 1967:Pl. 263).

Before discussing the early thirteenth century minaret of Nigār, which I believe in many respects epitomises the various points I

have tried to make in this chapter, I would like to discuss a number of other monuments which lie in the Iranian province of Khurāsān and date from this later period.

At Firdaws, formerly Tūn, the Masjid-i Jāmi' is of the single īvān type, and was probably constructed at the beginning of the thirteenth century (Note 14). Although considerably damaged by a recent earthquake, the main facade of the qibla īvān is largely complete and the decoration can be studied (Pl. 129). The portal is outlined by three main decorative bands of plain brick stretchers, each of the stretchers having a circle engraved in the centre. The outer two decorative bands eventually join at the base to enclose the central band. This outer decorative band is formed of a series of super-impositions similar to those of Mashhad-i Misrīyān, although only giving half the pattern, the band having as it were been sliced down the middle. The central decorative panel is composed of a series of interlocking geometrical flower forms created by a ten-petalled flower with a ten-pointed star inside, with yet another ten-petalled flower at the centre. This design would appear to be a development of the previously described geometrical forms. The inner edge of the portal arch is surrounded with a decorative stucco band on which there are traces of red paint which, with one or two fragments of blue-glazed tile insets in the brick pattern, constitute the sole remaining examples of any colour which might have been applied to the facade.

The nearby Masjid-i Jāmi' at Gunābād, which was built in 1212 (Godard 1949:63), is one of the more familiar two-īvān type which became very popular in Khurāsān. The pīshtāq of the qibla īvān

has the remains of a monumental inscription in very simple Kūfic, in strong contrast to the more elaborate inscriptions previously mentioned. This is framed by a decorative brickwork panel, the pattern of which is more complicated than previous ones, but it that much more flabby and lacks definition (Ibid:63) (Note 15)(Pl.132-3). A similar, if less elaborate stucco panel encirles the arch, which, like that of Firdaws has a red background. The facade of the northern īvān consists of a series of vertically spaced decorative brick panels, each of which was originally surrounded by a band of brick pattern incorporating both designs from the qibla īvān, but with a blue ceramic boss in the centre of each (Pl. 134).

Behind each corner of the facades of both īvāns are the stumps of minarets, the bases of which continue behind the facade to ground level (Note 16). These pairs of minarets would thus have faced each other across the sahn, to my knowledge the first example of such an arrangement, although minarets had already been paired in Ṭabas and Ardistān (catalogue 34 and 35) as well as at Nakhichivān (Note 17). The pattern used for the minaret is of the simplest (Pl. 135), similar to that of Fīrūzābād (catalogue 28, Pl. 80), but making no use of wide rising joints, nor of raked joints to create any of the shadow play associated with the earlier minaret patterns. The Gunābād mosque therefore has little to say in the development of pattern, but is significant in its form and architectural ideas. The same cannot be said of the last two mosques I wish to discuss.

One of the chief glories of the two īvān Masjid-i Jāmi' at Zūzan, built in 1219 (Godard 1949:125), is the superb monumental inscription

on the facade of the qibla īvān. This is in magnificent foliated Kūfic, the finials being regularised between panels of flowering vegetal pattern (Pl. 137). The inscription is set against a carved ground of alternate circular and spindle shapes, reminiscent of the Herat portal, although the inscription is more ornate (Pl. 125). There are traces of colour in the inscription but only as touches to enliven it; basically it is of plain brick, the colour being reserved more for the guard-bands. These consist of a series of interlocking patterns framed by a band of stretchers which twist and overlap(Pl. 138) to seperate the various patterns, exactly as at Firdaws (Pl. 130). Like those of Firdaws, each of the guard-band has a stretchers/circle, or bead design carved in the centre, and the indentations formed by the twist and overlap of the bands are filled with a triangular blue faience tile. The effect at Zūzan is much richer and the patterns more evolved, but the similarity is striking. In Zūzan part of the decorative brick pattern is also in blue faience, and this is reflected in the great decorative panel at the rear of the īvān above the now-disappeared miḥrāb.

This panel comprises a monumental plaited Kūfic inscription, of which both the central knots and the finial patterns have been regularised. The letters themselves are in turquoise faience, set against a background of alternate diamonds of dark blue faience and of the pink brick of which the mosque is built. The whole is surrounded by a guard-band of alternate turquoise and white faience bricks. Below the inscription is a row of medallions containing a series of raised brick patterns heightened with turquoise faience and set against a carved brick ground. This idea is reminiscent of the series of roundles on the minaret of Jām, although the actual

realisation is much evolved.

The northern īvān, which formed the entrance to the mosque, is slightly less magnificently decorated, colour being restricted to the embellishment of the muqarnas semi-dome within the arch, each muqarnas having a pattern in brick and turqoise faience. The monumental inscription which again frames the īvān is of brick in a foliated Kufic against a patterned brick ground. This is however in a much moreruinous state, and all the finials of the letters have disappeared, so that it is impossible to judge the original richness of the design. The decorative brick bands which framed the inscription band have also disappeared (Pl. 139). (Note 18).

In its present ruined state the two īvān Masjid-i Jāmi' at Farūmad is a good example of the bad construction technique which so often plagues Islamic monuments. After the previous 'Saljūq' period, when construction was important and three-dimensionality existed, Farūmad shows a complete return to the previous concentration on surface to the exclusion of all else. The interior is almost entirely covered in carved and incised plaster, which gives an extremely rich impression, but masks very poor quality brickwork. The twelve-petalled interlinked geometrical design which forms the maindecorative band on the facade of the qibla īvān has the interstices between bricks filled with stamped terracotta insets. The inner band, which elsewhere contained the inscription, is here purely decorative based on a form of plaited Kūfic with regularised knots and finials, but with no actual inscripiton. The vault was originally covered with a rich stucco pattern above a Qurānic inscription set against a flowing vine-leaf scroll. The stucco mihrāb is entirely

covered with inscriptions and finely carved floral and geometrical patterns, with an upper register of carved stucco roundels (Pl. 141) which look forward to the stucco roundels in the upper register of the mihrāb of the Imāmzāda Yaḥyā at Varāmīn (Note 19). The muqarnas which surmounts the Farūmad mihrāb (Pl. 142) has already been referred to in the discussion of the Ghurid portal at Herat (Pl.126), and certainly represents a flowering of this form which which was not to be surpassed even during the fourteenth century. The northern īvān was in many ways similar to the qibla īvān, utilising many of the same designs, with the addition of areas of plaster incised to represent brick patterns, masking inferior quality brickwork, a further example of the return to surface preoccupation already noted at Mashhad-i Misrīyān. The date of construction of the mosque at Farūmad was originally included in the mihrāb inscriptions, but this section has been destroyed (Godard 1949:115). It would however, seem that the mosque should be assigned to the early thirteenth century, prior to the Mongol invasion, at which time it probably suffered partial destruction (Note 20).

The last monument to which I wish to refer is once again a minaret, that of Nigār, which can be dated to 615/1218, and was probably built by the same Malik Zūzan who built the Masjid-i Jāmi' at Zūzan (Hutt 1970/2:178-80). This minaret, which is attached to a later rebuilding of the mosque, although it was never free-standing (Pl. 143), is ornamented with two major patterns in the flush bond basket-weave technique formed by alternating bands of soldiers and stretchers. The lower zone is a unique pattern of interlinked lozenges, while the upper is a diaper of lozenges as on the minaret of the Masjid-i Malik in Kirmān (catalogue 13, Pl. 32). Both sets

of lozenges are heightened by a series of crosses in turquoise faience, while the lowest guard-band is in turquoise diamonds between dark blue spindle shapes as first appeared in the Masjid-i Jāmi' at Zavāra (catalogue 29, Pl. 82). The lower part of the cylindrical shaft above the square base is encircled by a series of angular flanges, doubtless inspired by the nearby minaret of the Masjid-i Jāmi' at Zarand (catalogue 10, Pl. 26).

The most significant decoration on the minaret is a Qurānic inscription, ṣura 97, the ṣura of Power, which is in turquoise faience plaited Kūfic. Both knots and finials are regularised, as has been the tendency in the monuments so far discussed in this chapter (Pl. 144), although the finials bear more resemblance to the stucco ones in the Masjid-i Haydarīya in Qazvīn, dated to the twelfth century (Pope 1964-5:Pl. 315a), than to the Ghurid-Khwarazmian ones. The inscription is set against an openwork brick ground similar to that of Barsiyān (catalogue 17, Pl. 45), again not following the more complicated grounds of this later period. However the combination of a rich faience plaited Kūfic inscription against a patterned brick ground symbolised the advent of the thirteenth and subsequent centuries, in sharp contrast to the early part of the twelfth.

Undoubtedly all these new ideas and forms had their origins in the advances achieved under the Saljūqs, as they in turn had built on previous work, but during the latter part of the twelfth century a major artistic revolution took place, which was as radical as that of the appearance of the Central Asian Turks at the end of the tenth century. I have tried to show the beginnings of this revolution

by a comparatively detailed analysis of the various monuments mentioned in this chapter, and to show how they led into the Il Khānid style, which was in fact a direct continuation of this new style. The most important aspect is the return to a surface preoccupation, the two-dimensional as opposed to the three-dimensional 'Saljūq' approach. Because of this I feel that the true end of what has been called the Saljūq period in Iran, should be placed somewhere in the third quarter of the twelfth century, despite a number of stylistic anachronisms which lingered on in certain western areas.

Chapter IX. Notes.

1. The early twelfth century facade of the Masjid-i Maghāk-i 'Attārī in Bukhārā (Hill and Grabar 1967:Pl. 3-5) also combines a considerable number of these new techniquesand decorative forms, particularly the combination of brickwork, stucco and alabaster to form decorative patterns on the facade. It is interesting to note that the decorative band above the portal has an eleventh century brick fret design as in Dāmghān (Pl. 15), however the raised geometrical patterns on the facade look forward to those of Firdaws and Zūzan (Pl. 130 and 138).

Mention must also be made of the mausoleum of Sālār Khalīl in northern Afghanistan, which Melikian Chirvani (1968:59-92) dates to the first half of the eleventh century. A monumental inscription around the portal is of considerable importance in the development of the later inscriptions, and possibly provided one of the inspirations for the Ghurid work, which it resembles. The interior was apparently redecorated in the mid-twelfth century, and the upper section of the miḥrāb is decorated with a layer of plaster on which is incised a brick design which bears no relation to the actual construction underneath. He also publishes a further monument in the same article, that of Imām Sāhib Zyarat, which he dates to the twelfth century. This has a striking resemblance to sections of the Zūzan Masjid-i Jāmi' (Pl. 137), and also the engaged colonette with an inscription for a capital has a strong resemblance to those of the Ghurid portal of Herat (Pl. 125). I would personally prefer to date both these monuments to the second half of the twelfth century on stylistic grounds, but if not would

suggest that they are both very forward looking.

2. For the purposes of this analysis I have not mentioned Dāmghān which is mid-eleventh century since the development of colour did not follow the style started at that point.

3. An illustration of the more normal speed at which artistic ideas moved can be shown by the minaret of Bālis in Iraq. It was built in 1218 as a simple brick octagonal shaft on a chamfered square plinth, the whole ornamented with a plain bond of single stretchers with wide rising joints, a number of plain brick inscription bands forming the only decorative break. This minaret could be regarded as a complete anachronism in any Iranian context, having taken no account of the extremely rich decorative developments which had taken place in Iran over the previous 70 years or more. After the movement of the Mongol armies had pushed eastern ideas to the west by causing the artists and craftsmen to flee the devastated areas, such a simplistic form would he as equally unthinkable in the west as in the east.

4. The minaret of Jām is a most unusual building, not merely because of its size and decoration, but also because of its situation. It is built alongside the Harī Rūd in a very small valley in the centre of Afghanistan. The valley walls rise sheer on either side leaving a comparatively small area of land which might serve as possible building area. Immediately opposite the minaret, on the summit of the opposite cliff are the remains of a small fortress. The actual summit is very narrow, leaving room

for only a small habitable construction, one room wide. The defence rings of this castle then descend the hill to the west, away from the valley itself, providing a defence against attack from that direction. It has been suggested that the valley of Jām is the site of the Ghurid capital of Fīrūzkūh, but I would personally question this attribution. The valley itself is far too small to support the population of a city, particularly one into which the riches of India poured after the Ghurid victories. As an alternative I would suggest that the valley represents a small fortified valley for the Ghurid family, perhaps their original ancestral home. The fortress would therefore be a defence against slave-raiding parties from Herat to the west.

If Jām is not Fīrūzkūh, why should such an important structure as the minaret have been built there? I would suggest that the answer lies in the function of the tower, and it is significant that none of the inscriptions mention the word minaret. Apart from the major Qurānic inscription and other religious inscriptions, the inscriptions laud the Ghurid Sulṭān. From this I would deduce that the 'minaret' of Jām is in fact a commemorative tower erected by the Ghurid Sulṭān to commemorate perhaps one of the major victories in India, possibly the capture of the Ghaznavid capital of Lahore in 582/1186, at which point he might well feel able to declare that he had finally completed the work of his uncle 'Alā al-Dīn Ḥusayn, the 'World Incendiary' in completing the destruction of the Ghaznavids.

5. Unfortunately only sections of two sides of this base survive.

6. I mention a few examples from Anatolia, photographs of which

can be seen in Hill and Grabar 1967. Tercan, Mamahatun Turbesi, 1200; Kayseri, Cifte Madrasseh, 1206; Nigde, Alaedin Mosque, 1224; Kayseri, Sultan Han, 1232-6; Akserai, Sultan Han, 1229-79; Konya, Sircali Madrasseh, 1242; Kayseri, Sahibye Madrasseh, 1268; Sivas, Cifte Minareli Madrasseh, 1272; and Erzurum, Yakutiye Madrasseh, 1310. This list could be considerably prolonged.

7. The inscriptions from the minaret of Jām, as translated by Wiet (Maricq 1959:26-8).

The first text starting from the top:-

> Witnesses that there is no God but God and Muhammad is the Prophet of God.

The second is Qurānic, sūra LXI, verse 13:-

> Help from God and present victory. Give good tidings to Believers, Oh you who believe.

The third:-

> The magnified Sulṭān Ghiyāth al-Dunyā wa al-Dīn Abū al-Fatḥ Muḥammad ibn Sām.

The central inscription:-

> The magnified Sulṭān, the august King of Kings (Shāhanshāh), Ghiyāth al-Dunyā wa al-Dīn, who exalts Islam and the Muslims, Abū al-Fatḥ Muḥammad ibn Sām, associate of the amir of believers, may God eternalise his kingdom.

The construction inscription:-

> Work of 'Alī ibn....

All that can be read from the base inscription:-

> Abū al-Fatḥ....

8. I have been unable to obtain a translation of the inscription from the Herat portal.

9. The idea of using an inscription as the capital of a column is of considerable antiquity in Islam; one of the earliest being from a mihrāb from Barca in Libya which dates from the early Fāṭimid period in the tenth century. Another example is mentioned in Note 1, the building called Imām Ṣāḥib Ẓyarat by Melikian Chirvani (1968: fig. 21).

10. The inscriptions from the smaller mausoleum at Chisht, as translated by Wiet (Maricq 1959:70).

on the right:-

The magnified Sulṭān...

on the left:-

to the date of rabī' II of the year.....

11. Quṭb al-Dīn Aybak was one of the slave Generals of the Ghurid Mu'izz al-Dīn Muḥammad Ghūri, brother and successor to Ghiyāth al-Dīn. He was appointed Viceroy of Delhi by Muḥammad Ghūri, and on the death of his master in 602/1206, proclaimed himself Sulṭān of Delhi and founded the first Muslim dynasty to rule exclusively in India (Lane-Poole 1925:295).

12. All these patterns and inscriptions are carved in the sandstone of which the minaret is made, a further example of utilising the expertise of the local craftsmen to execute the decorative ideas brought in by the Islamic conquerors.

13. 'Alā al-Dīn Muḥammad, Khwārazm Shāh built a large mosque in Mashhad-i Misrīyān shortly before 615/1218, the portal of which remains in a ruined state. At the same time as he built the mosque, the Khwārazm Shāh also built a minaret, the remains of which still stand. The lower section is apparently ornamented with double stretchers, while the upper section is in single stretchers with wide rising joints. The ornamental part of the middle section has been entirely destroyed (Pribitkova 1957:143-9).

14. Godard (1949:61) dates this to the early thirteenth century by association with that of Gunābād, which is dated by inscription

15. As can be seen by reference to the illustration (Pl. 133), this pattern resembles some of the earlier brick fret designs, particularly that of Bistām (Pl. 69), but it lacks the clarity of the earlier model and appears to choose complication for its own sake. In this comparison the Gunābād example looks decadent.

16. The extension of the minarets to ground level is unusual in that they were more normally placed on top of a strengthened portal. When Tīmūr built the mosque of Bībī Khānum at Samarkand in 1399, the qibla īvān was flanked by a pair of octagonal minarets which stand in front of the īvān facade and are visible down to the ground. It has already been suggested that he brought this idea with him back from India.

17. The Adhai-din-ka-Jhompra at Ajmer in India (Brown 1964:Pl.VI, fig. 1) dated 1205, has a pair of fluted minarets on the pīshtāq portal, showing how far this style was accepted by this time. The

Nakhichivān examples, now destroyed, have been tentatively dated to the late twelfth century (Schroeder 1964-5:987 n.2).

18. The mosque was built by Qavām al-Dīn Mu'ayyid al-Mulk Abū Bakr b. 'Alī who ruled in Zūzan as ruler of the province on behalf of the Khwarazm Sham Muhammad. He moved south into Kirmān province around 609, and had acquired firm control over the province not long after 611. He is noted for having consolidated the region and for extending his control over Hurmuz. He is said to have made the region prosper, and was given the title Malik by his master. The Khwārazm Shāh received the news of his death while he was at Nīshāpūr in late 614, and thereupon gave the province to his own son Ghiyāth al-Dīn Pīrshāh (Hutt 1970/2:179).

19. I have been unable to find a published photograph of the mihrāb section of the Imāmzāda Yaḥyā, although there is a photograph of part of the stucco from the Imāmzāda in Pope's Persian Architecture (1965:Pl. 181-2), but this does not show the roundels above the now vanished mihrāb, which was apparently of lustre tiles.

20. It has been suggested that the Farūmad mosque was restored after the Mongol invasion, and that much of the decoration dates from this later restoration. This would however, have been one of the first rebuildings after the destruction, since it became the capital of the province after the destruction by the Mongols of nearby Bayhaq, and would therefore all certainly date from the first half of the thirteenth century. This would not therefore invalidate the argument.

## Chapter X. Possibilities of Dating by Style.

There would appear to be a limited number of major brick patterns with a number of more or less significant variations on these themes. Much of this is obviously dictated by the medium itself, in that there can be only a comparatively limited number of ways of disposing bricks into patterns. Nonetheless, considerable ingenuity was often displayed in adapting various of the major patterns and giving them an individuality, either by the use of cut brick insets, as in some of the patterns of Khusrawgird (Pl. 63-4, fig. 24 and 31), or later on by the use of coloured brick insets against a plain brick background, as in Sabzivār (Pl. 88), Ṭabas (Pl. 90), or Nigār (Pl. 144, fig. 18).

One extremely important area of pattern development is shown in the evolution of the guard-bands which seperate the major zones o frame bands of inscriptions. Originally of an almost stark simplicity, as in Nāyīn (Pl. 1), Nayrīz (Pl. 6), or Zarand (Pl. 26), they were often developed through the use of curved bricks, as in Kirmān (Pl. 34, fig. 32), terracotta mouldings, as in Dāmghān (Pl. 17), or Khusrawgird (Pl. 65, fig. 32), and stucco overlays and infills, as in Zavāra (Pl. 23), or Sāva (Pl. 61). They were thus transformed into some of the most complicated of all patterns. Despite this ingenuity and the resultant wealth of material available however, some of the simplest of these guard-bands continued in use until the end of the period under discussion, and indeed are still used until the present day. It is thus difficult to use any of these guard-bands as dating criteria.

It is in fact extremely difficult to use isolated pattern examples, either those of the major zones or the guard-bands which accompanied as indications of date or of development. Account must be taken of the entire range of pattern and colour, or lack of it, on the minaret, and also its geographical position with relation to the apparent development within that particular area. Once the whole picture is complete, with the entire range of patterns known for each area, and the actual dated examples firmly fixed within each scale, it should be possible to assign at least approximate dates to all known examples, and to place any subsequent discoveries within a reasonable historical framework.

One of the other suggestions which has always been made is that it should be possible to use brick sizes to determine some form of chronology. As can be seen from the catalogue, I have, wherever possible, endeavoured to ascertain the various brick sizes used, both in the basic structure of the minarets, and also for the facing bricks of which the various patterns are made. This was done to see whether or not the different brick sizes could be used as a gauge to fix the dates of the minarets, but this proved completely ineffective, and all that can be said in this respect is that, during the period under review a number of different brick sizes were used, but that at no stage can they be regarded as effective dating criteria within the period. The bricks manufactured were almost invariably of a very high quality, a fact which has led to the disappearance of a number of monuments - destroyed for the sake of their re-usable properties.

The bricks were almost invariably square; perhaps the most common

size ranged between 24 and 25cm. square, by between 3 and 5cm. thick, but at all times both larger and smaller sizes were regularly used. Sometimes a number of different sized bricks were used within the same minaret, as in Zarand (catalogue 10) and the Mīl-i Nādẹ̀rī (catalogue 11), although in these instances the larger bricks were usually used for the core and the smaller ones as facing bricks. The facing bricks all have a ground front, a technique which is still in use today (Wulff 1966:122), and form a cladding around the main core of the minaret.

As I have suggested, after examining brick sizes in a number of minarets, it is not possible to use the various sizes as dating material within the period itself, however it can be stated, as a general rule, that buildings constructed using this form and quality of brick can be dated prior to the fourteenth century. As has already been indicated, after this time the basic materials tend to be of much poorer quality, a rubble infill behind a highly decorated facade, which trend was already visible in the thirteenth century as is indicated by the mosque of Farūmad.

The eleventh and twelfth centuries in Iran were undoubtely the time during which all aspects of brick design and decoration reached their apogee, and, as I have tried to show in the chapter on Decoration, the various developments occurred in a reasonably chronological order, but an order which is also closely related to the geographical position, although certain patterns naturally appear in all areas; there is however a case for classifying certain regional schools, a fact which has to be taken into consideration when trying to ascribe some sort of date order.

One particular pattern which has a definite regional distribution is the brick-fret design. This pattern only makes one real appearance in the south on the minaret of Zīār (catalogue 39, Pl. 104, fig. 29), when, as I have already suggested, it seems to have been a deliberate archaism. Apart from that brief late appearance, it was only to be found in the north, northeast, the Khurāsān area. Since, as I have suggested in the chapter on Decoration, this pattern is to be particularly associated with the Central Asian Turks, such a distribution is to be expected. The pattern is found as far west as Sāva (Pl. 60), and went as far south as the now vanished minaret at Ṭabas (catalogue 44), where it also appeared on the twin minarets, even if it is now impossible to see it because of recent restoration (catalogue 34). This appearance in Ṭabas would be expected because of close connection with Khurāsān by the trade routes across the desert.

Although there are only three minarets and one tower remaining in the area, it would appear that Kirmān was also the home of a regional school, all three of the minarets, Kirmān, Zarand and Nigār have one flush basket weave pattern in common (Pl. 26,33, and 144), while both Zarand and Nigār have the flanged base (Pl. 26 and 143). The Mīl-i Nādẹrī (Pl. 27) is not quite so obviously of the same school, but it is possible that the upper section was rebuilt during the reign of Nādir Shāh (catalogue 11).

The Isfahan area naturally acted as a most important centre, and can be said to have a style of its own, although of course fitting in with the style of the period. Many of the flush basket-weave patterns are similar to those used in the other parts of the country,

but there is less attempt to create a shadow play by deeply raked joints, even the rich patterns of Gulpāyagān (Pl. 51-2) present a much flatter picture than those of Kirāt (Pl. 38-41) with which it might well be compared. This could well be seen as a continuation of the preoccupation with surface, the Iranian two-dimensional feeling being stronger perhaps in Fārs. Whatever the reason, Isfahan certainly has a definite regional distinction of its own.

These essential distinctions having been accepted however, it is possible, within each of these major divisions, to establish some sort of chronology. In all cases this has been helped considerably by the number of dated inscriptions which provide the essential skeletal framework on which it has been possible to build, but it is surprising how often the dates confirm a position to which often minor variations and developments would have assigned the minaret in question. Previous attempts to create a reasonable chronology have always foundered on the assumption that the second minaret at Ghaznī dated from the time of Maḥmūd and not from that of Bahramshāh, some 150 years later. This has always necessitated positing the existence of a number of missing tenth century monuments, on which the requisite developments would have taken place. A futher considerable problem was then created when confronted by an apparently simplistic, almost retrogressive movement during the remainder of the eleventh century. The correct interpretation of the inscription on this minaret by Sourdel-Thomine (1953) has in fact rendered this thesis possible. Without this first step, any stylistic enquiry must, of necessity have been a hazardous occupation.

The order to which I have assigned the remaining minarets of the

eleventh and twelfth centuries in Iran has therefore been compounded of an analysis of stylistic variations within the major groups outlined above and the dated examples. It is possible that further research, both literary and archaeological, may alter the exact placing of certain examples, but within the terms of reference of this thesis, I would feel that they are broadly correct. Provided that one is able to analyse the entire pattern structure, and to have a broad knowledge of the majority of influences bearing upon the creation of all the remaining minarets, I would suggest that they fall into a logical stylistic chronology. Should other examples be discovered, such a stylistic analysis ought therefore to enable them to be placed in a reasonably correct chronological position.

## Chapter XI. Conclusion.

In order to demonstrate more clearly the development of the minaret in Iran I found it necessary first of all to outline the function of the minaret as such, and then to detail its development in the western Islamic lands. This was intended to provide a background against which the essential difference of the Iranian minaret form could be shown. In the west a number of different forms of minaret appeared, all of which were essentially built around a concept of interior space, this was not however the direction which the Iranian form pursued. While a number of different forms did appear in the period with which this thesis deals, they all lack this concept of interior space; the interior serves merely as a practical means of ascent. This would seem to derive from their origin in Central Asia where a number of traditions combined to produce the Iranian minaret form. These have been shown to be the idea of the stupa and the commemorative column working in combination with a tower tradition, towers used for defence, for look-outs, and especially as fire-signal towers. This latter idea was of great import as part of the spread of these minarets; why a country with no tower tradition should suddenly produce such a number in so short a time. As far as decoration is concerned I have tried to show how, for a brief period, the pre-occupation with surface which was allowed to develop independently of structure, was put aside in favour of a concentration on the structure itself, the decoration not merely being an integral part of the struture but emphasizing the actual construction. These opposite qualities I have referred to as two-dimensional and three-dimensional. As a complement to the history of the development prior to this period I have also tried to define the actual period, and to delineate the new developments

which ended the one period by introducing and creating another. Finally I have tried to analyse how such information as I have been able to acquire concerning these minarets has enabled me to put them into some form of chronological order.

Although much can be delimited between major boundary lines, these can only express the main outlines, the majority of the monuments; when dealing with artistic movements there will always be exceptional constructions which appear to contradict the main flow, archaisms which are deliberately introduced and innovations which appear before their time because of the interest of an individual. As examples of these there are the brick-fret patterns appearing on both Ziar (Pl. 104) and Vabkent (Hill and Grabar 1967:Pl.13), and the appearance of the minarets of Fahraj, 'Izābād, and Nāyīn in the tenth century. These would at first sight appear to moderate my arguments, but I feel that they merely emphasize the main sweep of the period without detracting from it.

Having said so much it remains to attempt to analyse exactly what the Sāljūq contribution was, and also to distinguish it from the general contribution of the Central Asian Turks. Taking 431/1040 as the point at which the Saljūq period began, there are certain major innovations which must first be accredited to the Central Asian Turks as a whole. Firstly the basic form of the Iranian minaret itself. As the examples of Sangbast, the Tārīk Khāna at Dāmghān, and Simnān show, the actual form and idea were there before the arrival of the Saljūqs. And secondly the idea of putting brick decoration onto the minaret. If it can be argued that the minarets of Fahraj and 'Izābād are of mud brick, and therefore not

conducive to the application of decorative brick patterns, an argument which the mud-brick towers of Zarand, and even the towers on the Yazd city walls (Pope 1964-5:Pl. 374) would tend to demolish, it cannot be argued in the same way for Nāyīn. If the stucco supports for the balcony were indeed the only major decorative adornments of the minaret, then it might be assumed that decorative brickwork, although known and used, as Jurjīr (Pl. 114-6) and Nāyīn itself (Pl. 2-4) witness, was not conceived of as a decoration for a minaret. Thirdly the idea of using the medium for the message, letting the components of the structure itself be the decoration; what I have called three-dimensionality. Linked with this last point which had appeared already in the tenth century as I have already indicated, there were a number of the actual patterns and designs which were to be used in the Saljūq period. With these to form a basis, it remains to be seen what developments actually occurred in the Iranian minaret during the Saljūq period.

With regard to the actual form of the minaret, it would seem that the use of the octagonal base, and its development into a major aspect of decoration should certainly be attributed to the Saljūqs. The finest examples, those of Kirāt and Gulpāyagān (Pl. 37-41, and 50-2), undoubtedly fall within this period, and it was also used on a number of other Saljūq minarets. This particular style was continued and formed a major decorative implement under the Ghurids, as in the minaret of Jām, and also in Turkey under the Ottomans, as in Edirne.

The idea of the flanged base, as it appeared in Zarand and Nigār must be given a Saljūq origin, although the stellate towers of Ghaznī

probably form part of the Central Asian Turkish tradition going back to the stellate towers of eastern Tibet. The apparent combination of these stellate forms with the rounded forms as in the Jar Kurgan minaret to form the minaret of Khwāja Siyāh Pusht in Afghan Sīstān may be attributed to the Saljūqs because of the combination to be seen at Zarand, but the realisation is post-Saljūq as in the Quṭb Minār in Delhi. The minaret of Antalya in southern Turkey seems to owe its inspiration to that of Jar Kurgan, and would therefore definitely come under the Saljūq aegis.

It is possible that subsequent investigations may prove that the minaret at Sangbast was indeed one of a pair flanking a portal, but the idea of a pair of minarets surmounting a portal probably appeared under the Saljūqs, at least in so far as those of Ṭabas and Ardistān can be attributed to their influence, which would seem to be possible. This idea was taken up by the Saljūqs of Rūm, noteably in a number of monuments in eastern Anatolia.

The double spiral staircase was a Saljūq creation, again used by the Ghurids in the minaret of Jām, and subsequently used to great advantage by the Ottomans, who even had triple staircases leading to seperate balconies on their minarets.

Although the idea of the minaret as a <u>manāra</u> was one of the functions since the time of its first appearance, I have suggested that a planned construction programme, utilising a system of minarets as light-towers to guide both travellers and the all-important communications network, was basically a Saljūq innovation, although the idea generally originated as part of the Central Asian Turkish

tradition. Despite the official closure of the barīd as a central spy system under Alp Arslān the postal system was most important under the Mongols and the speed with which messages were transmitted across the empire was proverbial.

The Saljūq period therefore saw a considerable number of form developments to the structure of the minaret in Iran, ideas which were to be continued and still further elaborated under subsequent dynasties, but which owed their origin to this particular group of Central Asian Turks. The period saw an equal number of most significant decorative developments.

The eleventh and twelfth centuries undoubtedly represent the high point of brickwork decoration. The origins appeared in some of the tenth century monuments, particularly in the northeast, in what is now Russian Central Asia. The evidence of the Būyid monuments in and around Isfahan show that some of these ideas were already beginning to filter through, but with the first buildings of the eleventh century, there is no doubt of the difference in control and mastery of the technique. The first monuments, those of Sangbast and the early ones in Dāmghān and Simnān (Pl. 7-13) must be ascribed to the general Central Asian Turkish influence, but with the second minaret in Dāmghān we can begin an analysis of the Saljūq period contribution, and to show how much was achieved in this short space of time it suffices to take a few examples of the progress which can be illustrated photographically.

Firstly the brick-fret designs on the Masjid-i Jāmi' at Dāmghān (Pl. 15-6), where the basic geometric grid is used, with its implications

of other layers and of a ribbon pattern which is felt if not actually expressed. This is followed by the full flowering of the style in the three minarets which were built within ten years of each other, those of the Masjid-i Jami' at Sāva, 504/1110-1 (Pl. 59-61), Khusrawgird, 505/1111-2 (Pl. 62-5), and Bistām, 514/1120-1 (Pl. 66-9). These three minarets, alongwith that of Dawlatābād in Afghanistan, 502/1108-9 (Pl. 118-20), must surely represent the finest possible examples of the use of brick-fret design, and one of the glories of the Saljūq achievement. When this is contrasted with the design on the facade of the Masjid-i Jāmi' at Gunābād, built one hundred years later in 616/1219 (Pl. 132-3), the design is seen to be febrile and sterile, mere complication for its own sake, and lacking the strength and virility of the earlier examples.

The various elements of the flush-bond system are also to be seen already in existence in the ealrier minarets, but while these same patterns continued to be used throughout the period, considerable ingenuity was expended on creating new patterns. The upper pattern in the Masjid-i Malik at Kirmān (Pl. 31-3, fig. 7, 21-22), and those of Fīrūzābād (Pl. 78-80, fig. 28), being unique examples. At times as at Khusrawgird (Pl. 63-4, fig. 24 and 31), these patterns were enlivened with cut-brick inserts, and still later by the addition of coloured faience inserts, first as guard-bands, as at Zavāra Masjid-i Jāmi' (Pl. 82), and then as grace notes highlighting the basket-weave pattern, as in Sabzivār (Pl. 88) and Ṭabas (Pl. 90), which prepare the way for the superb treatment of the muqarnas at Sārabān (Pl. 99). All these new elements must be credited to the Saljūqs.

It was perhaps in the realm of guard-bands that most ingenuity was

displayed. From a simple row of inclined stretchers, as at Nāyīn (Pl. 1), or a simple row of single stretchers seperated by a round brick plug, as at Sangbast (Pl. 7), they evolved to the complicated zones which decorate Sāva (Pl. 60-1) by the use of shaped bricks, stucco infills and overlays as at the Zavāra Masjid-i Pāminār (Pl. 23), and finally carved terracotta on the Sāva, Khusrawgird, Bistām group.

It was also during this period that stucco and carved terracotta began to be used externally. Unfortunately the stucco was a very perishable medium, and only by one or two examples which have been preserved can we have some idea of how the use of stucco would have enriched the patterns by helping to make them more evident, as in Kirmān, where Plate 34 shows how the stucco was used to link the various brick elements in the guard-band, which in Plate 31 appears almost as a random arrangement of bricks. While carved brick-end plugs make only rare appearances on minarets, as on the plinth of the minaret of Gār (Pl. 71), they were always one of the great features of Saljūq architecture, and would in fact appear to be a Saljūq contribution.

The muqarnas supporting the various remaining minaret balconies also profited by advances in technique. Already at Sangbast (Pl. 7), there are the remains of two rows of niches forming a muqarnas, which is a considerable advance on the minaret of Nāyīn (Pl. 1) where the balcony appears to be corbelled out and the abrupt jutting out effect is concealed by a carved stucco ornament. The muqarnas reaches a high point of brick and stucco combined at Bistam (Pl. 67)

utulising all the possible monochrome potentialities. The next step was taken at the minaret of Sārabān where the muqarnas has coloured faience inserts (Pl. 99).

The advent of colour to outside decoration is of course one of the most significant contributions made during the Saljūq period, although eventually it was to spell the end of the art of brickwork. Within the Saljūq period however, colour was always used to heighten the brickwork and not in any way as a substitute for this technique, although as I have shown when discussing the end of the Saljūq period, the full possibilities were not explored even in this field until the next period. It is nonetheless to the Saljūqs that the credit must go for the revival of this art which was eventually to constitute their greatest triumph in the hands of the Iranians themselves during the Persian renaissance under the Ṣafavids.

The various inscription techniques also developed during this period. This was done in two main streams, the development of various scripts, or perhaps their advent as monumental scripts, on the various inscription bands on the minarets, and then the appearance of seal script as a form of monumental decoration as formed by the wide rising joints of the brick bond on the shaft of the minaret of Gār (Pl. 71) or as it first appeared as formed by the angled bricks on the portal of the Kharraqān tower. One of the earliest monumental naskhi inscriptions occurs on the minaret of the Chihil Dukhtarān in Isfahan, 501/1107-8 (Pl. 56), closely followed by that of Dawlatābād, 502/1108-9 (Pl. 120), where the inscription is deeply set, and not a revetment as at the Isfahan example, and still retains much of the original stucco filling. The full regularity of the knot and finial

had to wait until the thirteenth century, but a beginning was made in attempting regularity of finial, although very rudimentary, as at Ṭabas (Pl. 91). The disappearance of the various stucco infills prevents a full analysis of these developments, but, in so far as it can be measured by surviving examples, all forms of monumental script advanced during this period, although the various stages of this developemtns are probably more easily recognised in some of the remaining interior inscriptions, rather than on the minarets themselves.

Thus even if the Saljūq period in Iran is taken as extending for only some 120 years, which would be my own contention, the number of developments which took place within that time is truly remarkable, and particularly when it is considered that this thesis is concerned with only one aspect even of the architectural tradition. The Saljūq period forms a part of the major period which I have termed that of the domination by the Central Asian Turks, within which overall period their achievement was indeed considerable. While I would suggest that the actual monuments prove that they were not the great innovators which they have hitherto been claimed to have been, they formed part of the same tradition as their predecessors and were thus able to build and develop using the ideas and forms already imported. Apart from one or two isolated examples the Iranian form of the minaret dates from this major period, and probably even those examples can be shown to have been an earlier extension of Turkish interest, and during the Saljūq period in Iran the minaret certainly underwent considerable development in a number of ways which I have tried to demonstrate in this thesis.

Chronological list of extant Iranian minarets: tenth, eleventh and twelfth centuries.

1. Nāyīn, Masjid-i Jāmi'
2. Nayrīz, Masjid-i Jāmi' ..... 363/973-4 (?)
3. Sangbast
4. Dāmghān, Tārīk Khāna ..... 417-20/1026-9
5. Simnān, Masjid-i Jāmi'
6. Dāmghān, Masjid-i Jāmi'
7. Sāva, Masjid-i Maydān ..... 453/1061-2
8. Zavara, Masjid-i Pāminār ..... 461/1068-9
9. Damavand, Masjid-i Jāmi'
10. Zarand, Masjid-i Jāmi' .....pre-466/1073-4
11. Mīl-i Nādirī (? restored) .....pre-466/1073-4
12. Kāshān, Masjid-i Jāmi' ..... 466/1073-4
13. Kirmān, Masjid-i Malik ... 477/1084 - 490/1096-7
14. Kirāt
15. Ardabīl, Masjid-i Jāmi'
16. 'Alā
17. Barsiyān, Masjid-i Jāmi' ..... 491/1097-8
18. Varzāna, Masjid-i Jāmi'
19. Gulpāyagān
20. Isfahan, Chihil Dukhtarān ..... 501/1107-8
21. Sāva, Masjid-i Jāmi' ..... 504/1110-1
22. Khusrawgird ..... 505/1111-2
23. Bistām ..... 514/1120-1
24. Gār ..... 515/1121-2
25. Sīn, Masjid-i Jāmi'..... 526/1132
26. Isfahan, Masjid-i Sha'īyā

27. Isfahan, Manār Guldasta
28. Fīrūzābād
29. Zavara, Masjid-i Jāmi' ..... 530/1135-6
30. Ardistān, Masjid-i Jāmi'..... 555/1160-1
31. Gurgān, Masjid-i Jāmi'
32. Khuranaq, Masjid-i Jāmi'
33. Sabzivar, Masjid-i Pāminār
34. Tabas, Madrasa Daw Manār
35. Ardistān, Masjid-i Imām Hasan
36. Isfahan, Manār 'Alī
37. Isfahan, Manār Sārabān
38. Kāshān, Manār-i Zayn al-Dīn
39. Isfahan, Zīār
40. Isfahan, Rahravān
41. Khuramābād, Mīl/Manār

Additional minarets now ruined or disappeared.

42. Mīl northeast of Mīl-i Nādirī
43. Mīl-i Kasīmābād
44. Tabas, Masjid-i Jāmi'

1. Nāyīn, Masjid-i Jāmi'.

The minaret of the Masjid-i Jāmi, Nāyīn, presents a number of problems. From an evaluation of the stucco and the inscriptions within the mosque, this has now been dated fairly securely to the last half of the tenth century; it now remains to be seen whether the minaret can be equated with this date.

The way in which it has been fitted into the present mosque plan at first sight appears to be clumsy, but, as Schroeder (1964-5: 934-9) has pointed out, examination of the structure indicates that the side aisles were originally only two bays deep, in which case the minaret would have been contiguous to the southeast wall of the mosque, with an entrance outside the mosque but arranged more conveniently than the present one, where the entire access structure has been squeezed into one of the arcade bays. Certainly the base of the minaret appears to have been altered to allow the present access staircase, because the base of the tapering octagonal shaft overlaps the square plinth in a very clumsy fashion on that side. This would certainly indicate that the minaret was extant at the time of the later construction.

Unlike subsequent minarets, that of Nāyīn is practically devoid of ornament. The tapering octagonal shaft is of plain bond, with no wide rising joints to indicate any pattern. Its sole decoration is a chevron band of inclined soldiers, two-thirds of the way up. Above this a short tapering cylindrical shaft leads to a cornice covered with a foliate decoration in stucco or terracotta. This supports a brick railing, and the minaret ends with a small round shaft, as Schroeder says, 'full of apertures like a dovecot.' (1964-5: 937).

H. Viollet (1921: 228) was of the opinion that the minaret was a later addition, but he gives no reason for this statement, and does not indicate that there was any later addition to the plan. Schroeder is of the opinion that the minaret is contemporary with the mosque, an opinion with which I concur. This would make the minaret of Nāyīn the oldest surviving minaret in Iran, and as such, outside the scope of this thesis. I have, however, included it within the catalogue, along with certain others, because of its importance in determining the stylistic changes.

2. Nayrīz, Masjid-i Jāmi'.

The Masjid-i Jāmi' at Nayrīz is important in that it shows the survival of an indigenous Iranian type of mosque in addition to the imported Arabic style represented at Nāyīn, Dāmghān, Damavand, and Sīrāf. It contains a mihrāb which has an important historical inscription referring to the rebuilding of the mosque on a number of occasions, and stating that the original date of construction was 363/973-4. Schroeder (1964-5: 939) is of the opinion that the īvān and the minaret date from this original construction. The brick patterns on the minaret are much simpler than those of the minarets studied here, with the exception of 'Alā, although not lacking in elegance, and might indicate an early date. However, I have my reservations.

The base of the minaret is incorporated in later fifteenth century masonry, but none of the walls now adjoining the minaret appears to be bonded in, so that it was probably originally free-standing. It has a circular plan and is some 30m. high. It can be divided into three main sections: the lower cylindrical section, which occupies slightly over half the height; a central conico-cylindrical section which contains most of the brick patterns; and an upper section which projects over the central portion forming a parapet approximately 1m. high.

The lower section is divided into three by horizontal rows of inset, blind, pointed arches, each row containing eight arches, 0.80m. wide, set in a rectangular frame. Each of these frames is approximately 1m. wide by 3m. high, and is separated from its fellows by a section some 45cm. wide. This section of the minaret is 3.8m. in diameter.

The tapering central section is divided into segments by rows of diagonally set stretchers, creating an indented dog-tooth pattern. There are eight of these rows, the lower two separated by three rows of stretchers, the next two by four. The remaining five segments incorporate very simple patterns formed by alternating soldiers and stretchers.

The projecting upper section rests on two rows of corbelled stretchers which support a zone of interlocking arches, four bricks high. This is surmounted by a row of soldiers, six rows of stretchers, and finally a row of corbelled diagonal stretchers supporting the sill. There was presumably some form of wooden guldasta, but this has now disappeared.

The minaret rests on a base of large cut stones which support two rows of soldiers.

While I have included this minaret amongst the pre-eleventh century ones, partially in deference to Schroeder, I am not wholly convinced of this attribution. The panels in the lower section of the minaret do not strike me as belonging to this period, and I would seriously question whether, at this date, a simple conico-cylindrical minaret would have been built. As I have suggested in the first chapter of this study, this type of minaret would seem to have appeared only with the advent of the Central Asian Turks into the area, and I would doubt that such a minaret should appear in Nayrīz at this date. Following the important historical inscription on the miḥrāb, my own inclination would be to place the minaret at the time of the second rebuilding of the miḥrāb, that is 460/1067 (Godard 1936: 171). Only excavations or futher research in the local archives will eventually be able to determine the actual date of construction. For the time being I will include it among the minarets of this date, although with very strong reservations.

3. Sangbast

38km. south of Mashhad are the ruins of Sangbast. These ruins are fairly extensive, but the only recognisable complex is that which contains the sole surviving standing monuments, the tomb of Arslān Jādhib and the adjacent minaret. Arslān Jādhib, Valī of Tūs under Mahmūd of Ghaznī, died in 419/1028 (Schroeder 1964-5: 986), and the minaret is therefore dated by association to the first part of the eleventh century. A plan of the complex in which these monuments stood has been drawn by O. von Niedermayer and published by Diez (1918: 52), who calls it a Ribāt. This plan however, is received with reservation by Schroeder (1964-5: 987), and only excavations will reveal all details.

The minaret stands 22m. high and is conico-cylindric. Recent restoration has made it difficult to determine exactly what happened at the base, but enough remains clear to show that the minaret was not originally free-standing. According to Schroeder, at the time of his visit 'on the Southeast side adheres a substantial fragment of wall, in the southeast face of which is a half-round niche. This wall originally stood against the minaret to a height of 35 feet and was plainly one side of a gateway; but whether here at the beginning of the eleventh century was one of these monumental portals flanked by two minarets which are such a stately element in the architecture of the fourteenth and subsequent centuries cannot be decided without excavation'. (see Catalogue entries for Tabas and Ardistān, 34 & 35.)

At the base the minaret is 4.70m. in diameter and the walls are approximately 1m. thick. The bricks which form the core of the minaret are 31cm. square by 7.5cm. thick. There is a single spiral staircase which mounts to the door leading to the now missing balcony; the staircase spirals round a central column in an anti-clockwise direction.

The main overall pattern of the exterior of the minaret is formed of a plain bond of double stretchers with wide rising joints which are deeply raked, creating a deep shadow pattern. This double stretcher zone is divided into three by two narrow ornamental bands: the first above the 9m. point where the gateway joined the minaret, is a row of single stretchers separated by a round brick plug; the second, at approximately 13m., is a bead and knuckle-bone pattern with single stretcher guard-bands (see Catalogue for Kirmān, 13).

The lowest section is pierced by a single narrow window, whose top is formed by a single stretcher above which is centred a quarter brick; two inclined stretchers form a relieving arch, as shown in a detailed drawing by Schroeder (1964-5: 1040). Interestingly enough there is a similar formation at the bottom of the window as well. A much larger pointed arched window, two bricks wide and about 1.50m. high, starts at about 12m. and thus breaks across the second ornamental band.

The chief decorative patterns of the minaret occur immediately below the balcony projection. This balcony was originally supported by two rows of muqarnas (Pl. 7 ), below which are the remains of the brick Kūfic inscription. At the time of Diez' visit, the niches were still ornamented with carved stucco, but I was unable to see any traces of this at the time of my visit, although a stucco decoration would accord with other brick patterns, notably the bead and knuckle-bone at Kirmān. M. van Berchem (Diez 1918: 54-5) was unable to read any of this inscription, and confessed himself unable to tell whether it was historic or Quranic. The inscription rested on a row of double stretchers separated by single soldiers, below which was a row of bead pattern, now disappeared, visible in Diez' photographs, between single stretcher guard-bands. When Schroeder visited the minaret it

was still possible to work out the next pattern, of which he has published a drawing (1964-5: 1038). More of the small separating bricks seem to have fallen since then, or have been cleaned away during restoration, so that the pattern is no longer fully intelligible. As seen by Schroeder, it was in the perfect Khurāsān tradition, and would not conflict with an early eleventh century dating. An interesting ornamental band separates this pattern from the main shaft.

4. Dāmghān, Tārīk Khāna Mosque.

The Tārīk Khāna mosque of Dāmghān, or Chihil Sūtūn, as it is sometimes called, is one of the oldest surviving mosques in Iran, combining Sasanian proportions with an Arab style ground plan to create a building of such harmonious proportions that it must remain one of the finest monuments in Islam. On his plan, Godard (Schroeder 1964-5: 933) was able to trace the remains of a square minaret alongside the extant eleventh century one, but I was unable to see any of these remains on either of my visits, owing to recent cleaning operations. While accepting the existence of the earlier minaret, I now propose to discuss the extant one.

The base of the minaret has been restored recently, and it is therefore impossible to distinguish any details of this. As it stands, the minaret thus rises, a slightly tapering cylinder, with no base or plinth, and with the lowest pattern almost at ground level. There are indications that there was a narrow zone of single stretchers in plain bond with wide rising joints, but this is not definite. The shaft is divided into six sections of brick pattern, with a band of simple Kūfic in brick-mosaic bisecting section two. The lowest pattern, number one, has a single basket-weave diaper formed of soldiers, the alternate crossing points being replaced by inset crosses, while the lozenges enclosed by the diaper have secondary lozenges within, formed by wide rising joints, with depressed centres. A guard-band of alternate diamond shapes and spindles formed by triangular shaped bricks, separates the first and second sections. The second consists of a single basket-weave diaper of stretchers framing soldiers forming lozenge shapes with indented centres.

The inscription is framed by guard-bands formed of triangular bricks, the lower set as diamonds, the upper as alternate diamonds and spindles. A guard-band of diamonds formed by triangular bricks set horizontally separates the second from the third zone, which is a slight variation on the basket-weave pattern in zone one, and is bounded at the top by a similar guard-band. All of the three lower sections are made up of patterns formed by wide rising joints in the bond.

The upper three sections are formed in brick fret design, and contrive a series of geometric patterns of great complexity, as on the minaret of Simnān (fig. 19 & 20). The effect of sunlight on this section, with its deeply indented shadows, is extremely rich, and unsurpassed by any subsequent developments in its dramatic impact. The two guard-bands of this section are of the disc and rhomboid pattern.

The inscription reads:-

> The construction of this minaret has been ordered by the illustrious Chamberlain Abū ....., in the year ..... (R.C.E.A.: 2922).

This personnage has been identified by Schroeder with the Abū Harb Bakhtīyār ibn Muhammad who built the nearby minaret of the Masjid-i Jāmi'at Simnān. The patterns on the two minarets are almost identical, and this would therefore agree perfectly stylistically. I have been unable to trace this gentleman, but I assume that it is for this reason that Schroeder assigns the minaret a date 417-20/1026-9. I have no difficulty in accepting this date, and a similar one for Simnān. Both of these would therefore lie immediately before the actual Saljūq period as defined in this thesis.

5. Simnān, Masjid-i Jāmi'.

The lower part of the minaret is totally enclosed within the walls of the mosque, undoubtedly a later enclosure, the minaret having probably been free-standing, and the lowest pattern zone has already begun at the point where this tall, conico-cylindrical minaret emerges from the roof. The lowest pattern is exactly the same as the lowest of the minaret of the Tārīk Khāna, Dāmghān; then followes an inscription in Kūfic between guard-bands of alternate discs and rhomboids. Above this is the same pattern as the third pattern of Dāmghān, which is divided by a similar guard-band from the equivalent of the second Dāmghān pattern. As in Dāmghān all these patterns are formed by wide rising joints. Above this, separated by a guard-band of inclined half-stretchers, is a brick fret pattern whose design has a diagonal brick as its principal accent (fig. 19 ). A further inclined stretcher guard-band separates this from another brick fret pattern, the same as the lowest of the Dāmghān brick frets. The same inclined stretcher guard-band is followed by another inscription, topped by the disc and rhomboid guard-band. Above this is a further brick fret design which is the same as that of the Pīr-i 'Alamdār tomb-tower of Dāmghān (fig.31,Pl.17), followed by another example of the inclined stretcher guard-band. The guldasta rests on a projecting three-phase muqarnas (Pl.12 ).

The inscription reads:-

> The erection of this minaret has been ordered by the illustrious Amīr, the Lord Abū Harb Bakhtīyār ibn Muhammad, client of the Amīr of the Believers. (R.C.E.A.: 2626).

The inscription would therefore seem to give this minaret the same date as that of the Dāmghān Tārīk Khāna, 417-20/1026-9. Since the Pīr-i ʿAlamdār in Dāmghān is dated 417/1026, and the Simnān minaret contains this fret as well as those of the Tārīk Khāna minaret, I would tend to place it after the Dāmghān minaret in date, although the inclined stretcher guard-bands are much simpler than those of the Tārīk Khāna. The Simnān fret using the diagonal brick as its principal however, only occurs in Simnān. It does not appear in the second Dāmghān minaret, that of the Masjid-i Jāmiʿ, which is somewhat later, and contains a further development in the shape of interlocking octagons. This could mean that the Simnān minaret is the earliest of the three; whichever it is, both the Dāmghān Tārīk Khāna and the Simnān minarets are certainly pre-Saljūq, and of approximately the same date.

6. Dāmghān, Masjid-i Jāmi'.

Although at first sight it would appear that the minaret of the Dāmghān Masjid-i Jāmi' is almost identical with that of the nearby Tārīk Khāna, and indeed many of the patterns employed are identical, there are significant developments which accord with the normally accepted date of approximately 450/1058.

The actual base is totally enclosed within the later mosque buildings, and the minaret emerges from the roof with the lowest pattern, the same as that of the Tārīk Khāna. A narrow guard-band of a raked single stretcher divides this from the second pattern, again, similar to that of the Tārīk Khāna. Above this is an inscription in a primitive form of plaited Kūfic, much of which is now destroyed. This inscription has not so far been deciphered. The inscription is set between guard-bands formed of facing 'S' shaped bricks, a considerable advance on the earlier guard-bands. Presumably these 'S' bricks were originally linked by stucco into a flowing line, following the analogy of the later Kirmān minaret (Catalogue 13).[1] This would probably also have been the case with the inscription, the bricks merely forming the foundation on which the stucco was laid.

The third pattern is also the same as that of the Tārīk Khāna, which completes the three wide rising joint patterns. The next guard-band consists of conjoined diamonds in an interlace formed by diagonally placed bricks (Pl.16 ). The remainder of the shaft is taken up with brick-mosaic fret designs, as in the Tārīk Khāna, the lowest ones again being identical. An alternate disc and rhomboid guard-band leads to the second major innovation, the interlacing of octagonal units, using large regular octagons with both elongated and broadened smaller octagons ( Pl. 16 ). A further disc and rhomboid guard-band leads to another new pattern, although this is a logical

development of the second Tārīk Khāna fret pattern, which in fact follows after a guard-band of diamonds and spindles formed of triangular bricks. Above this, between disc and rhomboid guard-bands, is the most significant innovation of this minaret; an inscription in plaited Kūfic, composed of a number of large rectangular slabs, each of which contains several letters in relief. Wilber (1939: 30-1) has noted that 'the letters are coated with a light blue glaze which varies slightly in color from one slab to the next. The glaze seems to have been a thin one, for in many places it has worn off.' However, 'the use of such slabs has little in common with the employment of faience pieces designed intrinsically as architectural ornament.'

The uppermost band is a single fret developed from the previous patterns (Pl. 15 ). This has an inclined stretcher guard-band above which are the remains of a further fret design with a number of rows of stretchers above. At the t ime when the photographs were taken for the Survey by Pope (1964-5: Pl. 359 A. - the two Dāmghān minarets are mislabelled and the captions should be reversed) the central column of the staircase apparently continued above the present top of the minaret; this has now been removed.

This is the first minaret which can be dated to within the Saljūq period, and although it contains a number of innovations, all of them had been prefigured in the preceding period, with the important exception of the coloured inscription. It is, however, interesting to note that this was a line of development that was not to be followed subsequently; the future development of faience inscriptions was the use of glazed bricks in a brick-mosaic technique.

7. Sāva, Masjid-i Maydān.

The Masjid-i Maydān, Sāva, is a comparatively late structure, built in the sixteenth century, but which partially enclosed the oldest dated minaret in Iran. The minaret is a simple truncated cylinder, the upper part of which has at some time been replaced with a small domed cupola having eight arched openings. This minaret is unusual in having a double spiral staircase - to the best of my knowledge, the earliest example of this form. Despite repeated attempts I was unable to enter this minaret, and was therefore not able to make detailed measurements.

There is no indication of any base, the cylinder rising directly from the ground. The lower 6m. are in a simple plain bond, with wide rising joints to create a textured surface. There are no longer any traces of the usual single or double finger stroke raking in the mortar, but these may have been cleaned away during restoration. A guard-band formed of inclined bricks separates this bond from the remaining decorative pattern zone. This is a most unusual feature and consists of a series of eight-pointed stars formed by deeply set, angled bricks against a ground of soldiers and stretchers arranged in a cross pattern (Pl.20 ). Above this is a dated floriated Kūfic inscription band framed by guard-bands of alternate rhomboids and discs. The date of this inscription, as read by Godard and Miles, and published by Smith (1935: 163; 1936: 316 n.2), is 453/1061-2. This inscription is ornamented with a number of brick stars and a superb brick rosette, and although no traces remain at the present, was probably covered with a stucco infill as in the Masjid-i Pāminār, Zavāra (Catalogue 8).

8. Zavāra, Masjid-i Pāminār.

It is possible that the Masjid-i Pāminār at Zavāra contained the first tentative steps towards a four-īvān mosque in Iran, a form which was finally realised within the same town some 70 years later at the Masjid-Jāmi' (see Catalogue 29). This conclusion has been arrived at by careful study of the plan and the various remains of the earliest periods (fig. 4 ). Almost certainly the mosque was built over the remains of an earlier temple, and it is to this first mosque construction time that the minaret belongs. It was originally free-standing, and was only incorporated into the fabric of the mosque at the time of the later Mongol re-building, at which time the mosque was ornamented with a number of stucco mihrābs and large panels of stucco work which overlay the original Saljūq stucco.

The minaret consists of a slightly tapering cylinder with the remains of a muqarnas cornice which originally supported a guldasta. The whole of the shaft is ornamented with single stretchers in plain bond set with wide rising joints. As it now stands the minaret is 20.83m. high. Just above the height of the present mosque roof there is an inscription set between guard-bands of bead pattern framed between single stretcher bands. The bricks forming the bead pattern were covered with a film of stucco, as was the inscription, with, in addition, a rich stucco floral pattern between the letters. It has not been possible to read the whole of the inscription, but the word 'Allāh' and the date '461'/1068-9 occur (Godard 1936: 309).

The lower tier of the cornice is all that remains, and like that of Sārabān (Catalogue 37), is a series of true niches between colonettes. Presumably the upper tiers would also have had heads only.

The brick sizes used are between 21 and 22cm. square by 4 or 5cm. thick.

9. Damāvand, Masjid-i Jāmi'

The masjid-i Jāmi' at Damāvand has been completely restored, and in the process of restoration a great deal of the original mosque has been destroyed. Considering the antiquity of this mosque, and the infrequency with which this plan is encountered in Iran, this is much to be regretted. As far as I was able to ascertain, however, the minaret is still basically the original one described by Smith (1935: 161-2) at the time of his visit, although some of the details have beenirretrievably lost. During his visit he noted the following facts: the truncated brick manar rose near the east corner; it was semi-detached, in that the western face adjoined the mosque wall, but this was a later addition, and there was no structural connection with the mosque; there was no decoration or inscription.

The foundation was of rubble stone, partially exposed, on which a square plinth rose to a height of 4.95m. The shaft was 'tangent' to the plinth, and he noted a base diameter for the shaft of 3.24m., stating that it tapered slightly to the top where there was a diameter of 3.90m. (I presume these figures should be reversed.) The shaft was broken off 14.55m. above the plinth. It was entered from a passage within the mosque, and had a single spiral staircase rising counter-clockwise around a tapering, square core. The shell was 62cm. thick at the base and 44cm. at the top. The bricks used varied extremely, those on the lower courses of the plinth were 44cm. by 7.5cm., while those on the remainder of the plinth were 29cm square by 6.5cm. Those on the remainder of the shaft exterior were 25cm. square by 5.5cm., a much more normal size for the period

The only ornament was formed by the wide rising joints of the single stretcher bond, of which he stated, 'each depression is backed by a clipped

brick concealed by mortar decorated with a vertical stroke of four fingers.' He came to the conclusion that this was no later than the end of the eleventh century, and possibly earlier, while Godard, on the basis of the inscriptions in the mosque, dated it to within the eleventh century (Smith 1935: 172).

A domed brick guldasta has been set on top of the minaret, and the shaft has been cleaned and the base restored. Basically, however, this is the same minaret, although unfortunately the 'four finger' marks have been cleaned from the wide rising joints. I would agree with placing this minaret within the eleventh century.

10. Zarand, Masjid-i Jāmi'.

Zarand, situated some 87km. northwest of Kirmān, was apparently a place of considerable importance in the tenth century. According to Muqaddasī, it had six town gates, and the mosque was in the town square surrounded by markets. In 582/1186 the province was overrun by the Ghuzz under the leadership of Malik Dīnār, who temporarily made Zarand his capital, having plundered and half-ruined the town of Kirmān.

All that remains of the minaret is now almost totally enclosed within a much later mosque, and serves merely as a staircase to the roof. The height of the minaret to the roof is 4.27m., and a further 1.35m. of the central column projects above the roof to allow the staircase to emerge. A slight taper is shown by the diminution of the inside diameter from 2.50m. at base to 2.35m. at roof level. At the base it was possible to measure the thickness of the wall, which was 0.75m., giving an overall diameter at the base of 4m. Given the size of the base and the gentle taper, it would have been possible for the minaret to have attained a considerable height.

The base of the minaret is surrounded by a series of alternate round and angular flanges 1.50m. high. These are formed of single stretchers and rise vertically until the top six rows of bricks, at which point they are tapered to form either conical or triangular points. There is no apparent structural reason for the use of these flanges, which cannot be regarded as buttresses in the normally accepted sense of the word, particularly given the solidity of the remaining section of the minaret. They must, therefore, be regarded as being purely ornamental. There is only one other example of a similar technique of which I am aware, and that is on the nearby minaret of the

Masjid-i Jāmi' at Nigār, where the base of the minaret is surrounded by a series of angular flanges. Since the probably date of the Nigār minaret is 1218 (Hutt 1970: 178-80), it falls outside the scope of this thesis, although it has been described in chapter V, but it is interesting to note that the minarets rests on a square brick plinth which is noticeably absent from the Zarand example. The disposition of round and angular flanges produces a similar ground plan to that of the Qutb Minār, Delhi, date 1195, and also that of the twelfth century minaret of Khwāja Siyāh Pusht in Afghanistan, although in both these cases the flanges continue to the height of the minaret. It would seem that the origin of the style is possibly to be sought in Central Asia.[4]

Immediately above the flanges is a narrow band of ornament, consisting of a series of alternate diamond and oblong bricks, set between guard-bands of double stretchers. Above this is the main remaining pattern of the minaret, formed of facing bricks, 16.5cm. square by 3.5cm. thick, set vertically and horizontally into the main structure. The mortar in which these facing bricks are set has been raked to a depth of 2cm. between the soldiers to allow the pattern to be more easily appreciated. This is a double basket-weave pattern with two bands of stretchers forming a 45 degree diaper, separated by a single band of soldiers, with a raked cross at each intersection. The lozenges created by the diaper are formed of soldiers and also have a cross set in their centres (fig. 6; Pl. 26).

The interior bricks which form the core of the minaret are larger than the facing ones, between 20 and 23cm. square by 3.5cm. thick. The staircase revolves counter-clockwise around a central column 0.56m. in diameter composed of square bricks similar in size to those of the core. There is no apparent break in bond anywhere, and, apart from minor restorations,

the whole of the interior would appear to be original.

There is no inscription attached to the minaret, nor is its construction mentioned in any of the sources, but it is noted that Qāvurt ibn Chaghrī Beg, the Saljūq ruler of Kirmān, built a number of towers and minarets in the province, and the simplicity of the pattern, particularly the lower single band ornament which is almost primitive, would seem to support such a dating, that is the second half of the eleventh century (Hutt 1970: 172-5).

## 11. Mīl-i Nādirī.

According to the sources (Bosworth 1968: 86) this tower was certainly one of several built by Qāvurt ibn Chaghrī Beg, the Saljūq ruler of Kirmān, to help maintain the desert road to Sīstān. There has never been any suggestion that this tower was ever anything other than a landmark to guide travellers, acting as a lighthouse by night. In the list of buildings set up in this isolated spot by Qāvurt, there is no mention of any mosque. Although provision for prayer would undoubtedly have been made, it has never been suggested that the adhān was given from this tower.

In form it is a slightly tapering cylinder, with a circular base which protrudes 30cm. beyond the wall of the tower and is 1.50m. high. The circumference of the tower above the base is 13.85m., while at the top it is only 8.71m. There are steps cut through the base ring to the entrance door which has a pointed brick arch.

The windows in the tower are of the arrow-slit type, just under one brick wide, that is approximately 25cm. They are topped by two superimposed stretchers, above which a stress arch is formed by two further sets of inclined double stretchers.

As it stands now the tower is 19.80m. high. The sources describe it as being 25 gaz high, and it would seem that the gaz is approximately equal to the metre, so that some 5m. would now appear to be missing.

The lower section is built of single stretchers in plain bond.

At approximately 5m. from the present top the brick pattern ornament begins. This commences with a band of chevron pattern formed of inclined stretchers, above which is the main decorative zone in a brick fret design which appears to have more in common with the basket-weave patterns than the other brick fret designs of Khorassan. An exact parallel escapes me, and, although it has obvious connections with other patterns examined, there is a marked difference. The same is true of the remaining two narrow decorative bands. All of these are formed of stretchers which protrude leaving a series of irregularly formed spaces (Pl. 27 ).

The bricks forming the lower section of the tower were 30cm. by 5cm.: these were also used to form the central core of the tower. The bricks used on the inner facing of the outer wall were generally smaller, 22 or 23cm. by 5cm., and it would appear from an eye count that it was these bricks which were used to create the upper patterns, although I was unable to verify this.

The thickness of the outer wall, measured at the lower window, was 85cm., and the stair tread at the same point 65cm., giving the central core a thickness of just over 1m.

The inner roofing of the staircase, instead of being an ascent directly associated with the underside of the steps above, rises in a series of gigantic steps, each being vaulted with a flattened triangle composed of three bricks on edge, the insterstices being filled with cement at the face of each step, above which the bricks were laid in single stretcher courses up to the base of the next step.

The base of the tower has been restored, and, as the name of the tower

suggests, it has been associated with a rebuilding by Nādir Shāh. Within the interior there is no apparent break in bond, so that there is no reason to think that the main section of the tower is a restoration. As in certain other buildings, notably the minaret of Khuranaq (Catalogue 32), it is possible that the upper outer section of the minaret has been restored, although here again there is no apparent break in bond, but it was not possible to examine the outer surface in detail. Judging by the remains of the nearby other tower which is associated with the Mīl-i Nādirī, and built by Qāvurt (Catalogue 42), it would seem likely that the main section of the tower dates from the period of Qāvurt, that is pre-466/1073, but that the upper decoration dates from a reconstruction under Nādir Shāh, attempting to imitate, or at least follow the original scheme of Saljūq decoration.

12. Kāshān, Masjid-i Jāmi'.

The masjid-i Jāmi' at Kāshān contains a twelfth century dome chamber, and a minaret, dated by inscription to 466/1073-4. The remainder of the building is very much later. The mosque itself is built on a slightly raised area, possibly the remains of a tepe, whereas the minaret is sited at ground level, and was originally free-standing. Just over 18m. of the original minaret remains standing; the upper part, a further 5m., is a later addition, possibly nineteenth century, culminating in a low-domed cupola having twelve round-arched openings. The present total height is 23.43m. It is a slightly tapering cylinder with a diameter of 4.35m. as measured at the height of 7.67m. at the base of the inscription, just above the mosque floor level.

The base of the minaret is enclosed within a modern garage which abuts onto the exterior wall of the mosque, but it was possible to examine this and thus check that the lower 7.67m. of the shaft has a simple plain brick bond with wide rising joints. Above this is a three-line Kūfic inscription, each line of which is framed by guard-bands of horizontally angled stretchers. The inscription zone is 1.80m. high. The remaining 9m. decorative zone of the original minaret has a pattern of rhomboids formed by wide rising joints in a basket-weave pattern of soldiers (Pl.28-9).

So far it has not been possible to decipher the inscription, except for the date of 466/1073-4 (Godard 1936: 309). Brick sizes range from 20 to 21cm. by 3cm.

13. Kirmān, Masjid-i Malik.

Le Strange (1966: 305) states that within the town of Kirmān, then called Bardasīr, there was a mosque called Jāmi'-i Tabrīzī, founded by Tūrān Shāh the Saljūq, which mosque still exists under the name of Masjid-i Malik. 'Imād al-Dawla Tūrān Shāh b. Qāvurt succeeded his brother Rukn al-Dawla Sultān Shāh in 477/1085 and died in 490/1097, and since both Schroeder (1964-5: 1034 fig. 367) and Grabar (Hill & Grabar 1967: 67) are in agreement that the minaret is coterminous with the foundation of the mosque, we are left with a period of some 13 years in which to date this minaret.

The minaret stands in the northern corner of the mosque, as shown in Schroeder's plan (1964-5: 1034). There are no signs of any contemporary wall attachments, so that the minaret was probably originally free-standing, being enclosed within the main mosque wall at the time of the later Saljūq rebuilding. Half of the minaret projects beyond the walls forming a corner tower to the mosque. Since recent excavations have cleared the base and outer face of accumulated building debris, it has been established that some 7.50m. of the minaret remains (Hutt 1970: 175-8). The section which faces the interior is completely enclosed except for 2.30m. which projects above the roof of the surrounding mosque. The outer facing bricks are 16.5m square by 3.5m. thick, while the bricks which form the inner core are 20 and 23cm. square by 3.5cm. thick. The minaret is a cylinder 3.60m. in diameter with no discernible taper.

The recent excavations revealed that the minaret stands on a cylindrical brick plinth, 15 bricks high. In fact, this plinth was apparently first built as a square, and was then made circular by the addition of facing bricks (pl.35). The chief remaining pattern of the minaret formed of facing bricks set horizontally and vertically into the structure, with the intervening

mortar raked to a depth of 2cm., is the same as that of Zarand (Catalogue 10), a double basket-weave pattern. Above this is an ornamental band of the bead and knuckle-bone pattern set between single stretcher guard-bands. Prior to the recent cleaning, the only visible portion of this pattern entirely lacked the stucco revetment, and appeared as a somewhat random arrangement of curved bricks (Hill & Grabar 1967: pl. 528). When the remaining portion was cleaned the actual form of the pattern was revealed showing how the bricks were interconnected by a stucco filler which created the geometric forms (Pl.34 ). This pattern is exactly the same as that of the minaret of Sangbast (Catalogue 3), with the exception that the two semi-circular bricks forming the bead pattern are here set vertically as opposed to horizontally at Sangbast. The conjunction of Diez' statement that there was stucco decoration on the Sangbast minaret with the discovery of the complete pattern in Kirmān, implies that the ornamental band in Sangbast also probably had a stucco filler, now disappeared. This was probably also the case with a number of other extant exterior patterns on buildings of this period, which would have given a much more finished appearance to the patterns.

The bead pattern has an ancestry going back to Sasanian times in Iran, and was later used to dramatic effect on the tomb of the Sāmānid at Bukhārā, since when it forms a basic element in many Islamic patterns. Likewise the knuckle-bone form, which appears later in a double and triple form in carved terracotta at Sāva and Khusrawgird (Catalogue 21 & 22).

14. Kirāt, Minaret.

The isolated minaret of Kirāt is situated some 200m. west of the village of that name alongside the main road, on the side of a small hill. At first sight there is no immediately obvious site adjoining the minaret which could have served for a mosque, but the siting of other minarets indicates that it was not necessary to have them immediately adjacent, and therefore evidence should be sought in the area to the east of the minaret, on the flat ground between the minaret and the site of the present village. Undoubtedly the elevated site was chosen so that the minaret should be able to act as a watch-signal tower, but I would disagree with both Sykes and Diez (1918: 50) who suggest that this was the only function of the tower. All the evidence of its construction point to it having been used as a mi'dhana as well as a manāra, and I would suggest that this requires further investigation to ascertain the position of the mosque. The position of a nearby dam and caravanserai are indicative of a settlement closer than the present village. Certainly the remains of a balcony at the top of the base below the cylindrical shaft indicate that the adhān was given from there.

The minaret consists of an octagonal base 16.45m. high, above which is a cylindrical shaft 8.15m.high, giving a total height of 24.60m. As can be seen from an examination of the photographs taken by Diez (1918: Pl. 12,2; 13, 1, 3 & 4), the foot of the base had been eroded, and the present restoration using unshaped boulders set in mortar bears no relation to the original base, which was probably entirely of brick. The bricks used vary in size from 21cm. square by 4cm. to 31cm by 7.5cm. The minaret is entered by a low door on the eastern side, now partially blocked by loose boulders. The single spiral staircase revolves around a cylindrical central shaft, leading first to a door at the top of the octagonal base leading out

on to the now-destroyed balcony. The upper section of the cylindrical shaft has collapsed, and the remaining section of the shaft has a distinct lean towards the north.

Apart from the section to the height of the balcony door, which is irregularly set, the remaining section of the cylindrical shaft is ornamented simply with single stretchers in plain bond with wide rising joints, a design used on three of the sections of the base.

The octagonal base has a number of pattern bands which can be closely related to some of the fret designs on the earlier Khurāsānian minarets, particularly those of Simnān and Dāmghān. There are five bands of fret designs on the base, the lower three being separated by wide bands of stretchers set with wide rising joints, which also formed the lowest section, now largely destroyed. Between the third and fourth bands is a Kūfic inscription, the only section of which to have been deciphered reads:--

'ordered the construction of this <u>manāra</u> the sheikh .....'

There is no trace of a date so far decipherable (R.C.E.A. 2923). The fourth and fifth bands are separated by a zone of panels, each panel being formed of stretchers set with wide rising joints, but the centre section of each uses stretchers which have been carved into a double-bow design, thus giving a heavily textured effect. Above the fifth band rise the supports for the balcony, consisting of corbelled brick columns set into the facia to support a set of rising <u>muqarnas</u> on which the platform sat. These were further strengthened by beams set into the structure, the remains of which appear at the head of each remaining column. There were two niches to each face of the octagon, the ground of which is formed of double stretchers set with wide rising joints (Pl.41 ). Each of the decorative bands and

the inscription band originally had a stucco infill to make the pattern more recognisable, traces of which still remain on one face (Pl.40 ).

Diez would tend to date this minaret closer to those of Sāva and Khusrawgird, that is in the first years of the twelfth century, but because of the similarity in design to the minarets of Dāmghān and Simnān, and the lack of the finer carved brickwork which is such a feature of the other two minarets, I have placed it slightly earlier towards the end of the eleventh century. There is a development, particularly in the use of muqarnas, from the earlier minarets, but still not to the point of the refinement of the Sāva and Khusrawgird examples.

15. Ardabīl, Masjid-i Jāmi'.

The Masjid-i Jami' at Ardabīl dates from either the twelfth century or the early Mongol period. To the north stands the remains of a free-standing minaret which can be assigned on stylistic grounds to the late eleventh century.

The minaret consists of a cylindrical shaft on an octagonal plinth. The lower part of the base is still buried, but on the southern side 1.67m. is exposed. Each face of the octagon is approximately 2.10m. wide. The cylindrical shaft rises directly from the octagon, no traces remain of any attempt to chamfer the corners so as to achieve a smoother transition. The northeast face of the octagon contains the door, now almost totally buried and impossible of ingress. The door is 0.70m. wide, and at the top of the door arch, the thickness of the minaret wall is 0.95m. The base was built of plain closely bonded brick, above which rises the shaft, the lowest section of which is in plain bond with wide rising joints forming a band 0.93m. in height. Above this is a simple brickwork pattern band 2.43m. high, above which approximately 2m. remain to the shaft, and this is in plain bond with wide rising joints. In the northern face, at the level of the upper zone of plain bond, was a window which may have had a balcony attached. The decorative brickwork zone is framed by rows of single stretchers as guard-bands, but with no further decoration. There is a single spiral staircase revolving around a central column. Set in the decorative brickwork zone on the southern face are two inscription panels, but these are much later than the construction of the minaret.

All that remains of this minaret indicates it having been a very simple

structure, its chief interest lying in its situation in Azarbaijan. The only decorative pattern resembles those of the eastern and southern groups rather than those of the Isfahan area.

16. 'Alā.

The village of 'Alā is some 10km. east of Simnān, off the main road but on a track leading directly into the Dasht-i Kavīr. It contains a baked brick minaret 10.25m. high. This is a slightly tapering cylinder, 2.58m. in diameter at the base, and 2m. at the top. It is formed of a number of varying bricks ranging from 21 to 24cm. square by 5cm. thick. The brick minaret rests on a stone base made of unsquared boulders, which is 75cm. high, and is formed of four courses of stones. The door is set just above the stone base and is 1m. high and 55cm. wide at the outer face with a single stone slab as a lintel. Inside, the door has a pointed brick arch above the stone slab, which leads to the staircase roof. The staircase is extremely steep, having a step rise of 30-32cm. It is also built on itself, that is, like the nearby minaret of Simnān, it has no central column. (fig. 10).

The exterior decoration is of the simplest, being formed of single stretchers, into which are set a number of bands of soldiers. The minaret is divided in half at approximately 6m. by a projecting double band of angled bricks, the upper section of the facade being advanced to the outer edge of this projection, and then continuing to taper until the top where a similar angled band supports two projecting sets of three rows of stretchers, above which a further double angled band supports the remains of a single row of stretchers, all that is left of the balcony supports (Pl. 43).

Although much simpler in execution there is a remarkable similarity between the design of this minaret and that of Nayrīz (Catalogue 2). In Nayrīz the angled bricks do not project, and there is more sophistication in the disposition of the soldiers, but in principle, they are much the same. These are the only two minarets in Iran with this particular pattern, and

must therefore argue some form of contact, although situated so far apart. The staircase rises in a similar way to that of the nearby Simnān example, but in no other way does the 'Alā minaret conform to the Khurāsān pattern. This could argue a southern Iranian inspiration and local execution.

The local tradition states that the minaret is 800 years old. There is no inscription anywhere near to confirm or deny this, but stylistically it would appear to fall into the eleventh century (Hutt 1971: 160).

17. Barsiyān, Masjid-i Jāmi'.

The village of Barsiyān lies on the north bank of the Zayanda Rūd, approximately 50km. from Isfahan. The minaret is currently partially enclosed by the outer wall of the later Masjid-i Jāmi', dated 528/1134 (Smith 1937: 40 ), and obviously previously served an earlier mosque, at which time it would have been free-standing. The minaret itself is dated by an inscription which encircles the top section and which consists of verse 76 of sura 22, and ends with 'in the year 491' / 1097-8. The whole complex forms the subject of an important article by Smith (1937), from which I have made the following observations.

The minaret leans slightly to the north, but is strudurally sound and consists of a conico-cylindrical shaft 34.55m. high. It is without a plinth and is 5.75m. in diameter at the base, and 4.20m. at the top. It is suggested that there is approximately a metre missing from the top. The shell is 1.80m. thick at the base, and 1.03m. at the top. There is a single spiral staircase, entered just above ground level through the later mosque, which rises counter-clockwise around a circular core 0.82m. at the base and 0.72m. at the top. There are remains of exterior scaffold holes, and the facing bricks which form the shaft decoration are not a revetment, but were laid up with and bound into the minaret wall.

The decoration of the shaft is comparatively simple when compared with some of the contemporary Khurāsān minarets, and consists of a metre of plain bond, above which is a zone, approximately 5m. wide, of single stretchers with wide rising joints, which is separated from the main decorative zone by a guard-band of alternate discs and rhomboids formed of semi-circular and triangular bricks laid horizontally between single stretchers. The main decorative zone

is formed of bands of soldiers spiraled in both directions to form a 45 degree diaper of nearly square lozenges, the field of each being a small depressed Greek cross framed in a square of soldiers. A similar cross also interrupts the spiral soldier bands at their alternate intersections. The shaft diaper has a slight clockwise twist. A further guard-band of discs and rhomboids leads to a minor zone containing a fret design, above which the plain cut-brick Kūfic inscription projecting from a brick-mosaic background is set between wide guard-bands of a square set vertically between two rhomboids, each formed of double stretchers. The slightly over-sailing crown is in double stretchers with wide rising joints.

The entire decoration of this minaret was picked out and made evident by the use of stucco, either in comparatively simple brick plugs or more complicated inserts. The depressed Greek crosses were intended to hold a carved stucco insert or a complicated cross form combined with a form of fleur-de-lys, while the lozenge diaper only really becomes evident when decorative brick plugs were inserted in certain of the rising joints. The guard-bands were also set in stucco with a fully carved stucco surround.

As Smith notes, the use of doubled stretchers in the inscription guard-bands and the crown is rare in the Isfahan district, and seems to indicate a Khurāsānian connection, as does the fret design in the minor zone below the inscription(Pl. 45).

18. Varzāna, Masjid-i Jāmi'.

Varzāna is situated some 100km. east-southeast of Isfahan on the Zayanda Rūd. Although now an unimportant village, it contains a fine Timurid mosque, which in turn encloses a much earlier minaret. This stands 19.84m. high of which the lower 3.72m. is totally enclosed within the later mosque. It was impossible to examine this base to ascertain whether or not the minaret was originally free-standing. At the point where the minaret emerges from the roof it is octagonal in shape, which continues for a further 1.23m. If this octagon represents the base it would have been almost 5m. high, basically the same as that of Gār (Catalogue 24).

Each face of the octagon was apparently ornamented with a brick pattern, sufficient of which remains to permit a reconstruction of the panel to the point of its emergence from the roof (fig. 23 ).

Above the octagonal base there is a 1.77m. band of double stretchers which is bisected by a groove 5cm. deep by 5cm. high, the width of a single brick. This groove is cut across by a series of vertical grooves 1m. high, regularly spaced 1m. apart. It is possible that these grooves represent the fixing point for the timbers of a balcony which would accord with the present position of the door at roof level. The previous original entrance to the minaret was at ground level at a point now inside the mosque, emerging within the dome chamber immediately after the portal. This door was bricked up some 50 years ago, according to my local informants.

This double stretcher section is surmounted by 3.90m. of single stretchers in plain bond, above which is an ornamental band of discs and rhomboids. Above this a further 6.12m. of the original minaret remain, the lower

portion of which has a staggered brick pattern utilising various brick sizes; the upper section has a double lozenge pattern formed of single stretchers, the wide rising joints of which form diagonally disposed squares with accented centres. The top 3.10m. represents a later addition, subsequent presumably to the collapse of the upper portion of the minaret, the staircase rise however, making it evident that the original minaret rose much higher.

The diameter at the top of the minaret is 4.43m., and at the height of the present door the outer walls are 80cm. thick. The staircase has a width of 65cm., each step being 25cm. high, with an inside depth of 18cm. and an outside one of 31cm. Brick sizes vary between 23 by 4cm. to 24 by 5cm. with those measuring 23cm. square by 5 cm. thick predominating. The thickness of the mortar varies between 2 and 3cm. There were no regular scaffold holes on the exterior, and the entire minaret was built of pale pinkish brick.

There is no mention of the minaret in any of the inscriptions which date the mosque, but on stylistic grounds I would have no hesitation in assigning it to the Saljūq period, and would suggest a date either late eleventh century or possibly early twelfth, comparable to the minarets of Gār and Barsiyān with which it forms a group. The use of double stretchers and the pattern on the octagonal base would rather incline me towards the earlier date, at least for the lower section, since there may have been three building periods, the two lower ones Saljūq (Hutt 1971: 159-60).

19. Gulpāyagān, Minaret.

This minaret is a free-standing, isolated monument in the centre of the town, not far from the Masjid-i Jāmi', but in no way connected with it. As Godard (1965: 277) has pointed out, there are the remains of the base of a minaret attached to the southwest corner of the kiosk of the Masjid-i Jāmi', which would have served that building, whereas there is no trace of any mosque near the standing minaret at all. The Masjid-i Jāmi' was built during the reign of Abū Shūja ibn Malik Shāh, 498-511/1105-1118, and it is possible that it replaced an already existing mosque to which had been added the minaret now standing. This would therefore pre-date the Masjid-i Jāmi', which is generally accepted to date around 494/1100.

The minaret consists of a tall cylindrical shaft set on a high octagonal base. It has a double spiral staircase, and each staircase is approached by a separate door (fig. 11 ). The octagonal base of the minaret has been considerably restored, as can be seen from photographs in the Survey (1964-5: Pl. 361 B), but the restorers have carefully followed the old brick patterns, fragments of each of which remained, and have also been able to restore the inscription which runs around the top of the base in a fine plaited Kūfic. This inscription is Quranic, and contains verse 53 of sūra39. One face of the octagon is significantly devoid of any pattern to the level of the inscription, which would suggest that at this point the minaret was contiguous with some pre-existing structure. The patterns are all formed by facing bricks set into the fabric of the minaret. They are laid horizontally and vertically to produce these designs, with wide rising joints to emphasise the patterns, many of which can be paralleled in other minarets (Pl.51 ). Each face of the octagon is ornamented with a slightly sunken panel crowned with a four centred arch, within which the architect

has created futher brick patterns (pl.52 ). Between each panel, on the angles of the octagon, is an engaged colonette, formed of half soldiers with wide rising joints, thespindle shaped capitals being separated from the shafts by guard-bands of diamond shaped bricks. Some of the colonettes are faced with triangular bricks, set so as to create a hexagonal centre with a circular brick centre inset. There are traces of stucco still remaining in some of these, as in some of the wide rising joints of the main brickwork panels, so that one must assume that the entire base was also originally ornamented with stucco plugs, which would also have decorated the interstices of the inscription. This is separated from the decorative panels by a guard-band of diamonds alternating with two triangular bricks set point-to-point to create a horizontal spindle effect. The knots in the plaited Kūfic inscription consist of regular pre-cast squares, the outline showing the ribbon of the plaits interlacing. The finials are all regularly spaced with a slight foriation. Above this is a zig-zag row formed of stretchers and half-bricks in brick-mosaic, with traces of the original stucco infill.

Each corner of the octagon is chamfered to meet the circular shaft, which begins with nine rows of single stretchers in plain bond, followed by a row of soldiers, above which the shaft is decorated with an overall diaper of diamonds formed by soldiers against a background of stretchers with a cross at the centre. The pattern is formed by wide rising joints. Three alternating rows of pointed arches, the apex of each arch forming the base of the arch above, are superimposed on the basic diaper pattern, the only instance to my knowledge of this double pattern form. A circular depression in the capitals of each arch suggest that there were originally insets at these points, although whether they were coloured is doubtful considering the date of the monument. A row of blind arches completes the decoration of the

shaft, but the central column of the staircase rises above this point for a further almost 3m. Wooden beams projecting from the shaft and central column are all that remains of the original guldasta.

The minaret, which is approximately 22m. high, has several interesting features, including the decorated high octagonal base, the double staircase, and the superimposed pattern.

20. Isfahan, Chihil Dukhtarān.

Basically this minaret is a tapering cylinder 24m. high on a 5m. octagonal plinth. The deformation of this octagon into a square base with one chamfered side, as Smith describes it (1936: 319), was caused by the exigencies of the building to which it was attached, and does not in any way alter the general classification of this minaret as cylindrical shaft and octagonal plinth. This fact is underlined by the octagonal core to the staircase, an unusual feature. On the eastern side a high wall adjoined the minaret to the height of the plinth, while a minor wall was attached to the southwest face. The diameter of the base of the shaft is 2.90m. while the walls are 55cm. thick, and the octagonal core 55cm in diameter. the door is 64cm. wide. At the top the shaft is 2.33m. in diameter, while the core has reduced to 33cm. The walls remain the same thickness (fig. 10).

The south face of the octagonal plinth is decorated with two brickwork panels above a simple close bond, the lower a simple diaper formed by a series of raised stretchers with a raised cross in the centre of each lozenge, while the upper is a more complicated fret which is one of the rare examples of this tyle in western Iran, and looks more towards the Khurāsān region (pl. 58 ). The southeastern face is continued to form the adjoining wall and has its lower section ornamented with a similarly formed diaper pattern, but of separate lozenges enclosing smaller lozenges. The upper section contained the Kūfic foundation inscription in six lines. An ornamental guard-band terminates both south and southeast faces and consists of an alternate solid knuckle-bone and diamond brick pattern between double stretcher guard-bands (Pl. 56).

The shaft of the minaret begins with a band of closely bonded plain brick,

above which is a zone of lozenges in diaper form with a cross at the centre of each, the pattern being formed of soldiers against a ground of stretchers. Two guard-bands separate this zone from the next; the first a series of square bricks, the second a sort of winged disc alternating with plain discs (Pl.57 ). The next zone is formed by a band of equilateral triangles reversed and juxtaposed, the field of each a triskele. A single guard-band of alternate diamonds and rhomboids divides this from the next zone, which consists of a raised fret of conjoined octagons and six-pointed stars on a plain ground. This is interrupted on the south-southeast side by a panel of five lines of naskhi inscription in projecting bricks on a plain field. The guard-band is alternate rhomboids and discs before a band of fret pattern similar to that of the octagonal plinth, above which is a guard-band of a row of discs. The main zone of decoration of the shaft comes next, consisting of a plain bond with wide rising joints. In the centre of this zone is a window facing the qibla. It has a rectangular opening with a wooden lintel and is flanked by round engaged colonettes with abacus capitals. These support a blind niche of a slightly concave tympanum having, as Smith noted, in profile a stilted four-centred, pointed arch framed in a rectangular reveal. The guard-band is formed by a row of diamonds above which is a band of very heavy fret centering on a series of six-pointed stars and a further guard-band of inverted triangles. The next band contains a raised Kūfic inscription on a plain ground, above which is the only repeated guard-band in the minaret, an alternate solid knuckle-bone and diamond band similar to that of the top of the octagonal plinth. This is followed by a heavy fretted band forming an angled 'H' with horizontal bands (pl.54 ), and then a final guard-band of bead pattern. The crown is slightly corbelled and apparently had a bold pattern formed of raised stretchers, but the major part of this has disappeared.

This minaret has a truly remarkable number of different patterns, including an unusual number of different guard-bands, and certain patterns which would appear more usual in Khurāsān.

The inscriptions. The top Kūfic inscription contains verses 2, 3 and 4 of sura 20. The Naskhī panel has five lines, of which the fourth and a part of the fifth are effaced:-

> In the name of God, the Compassionate, the Merciful. There is no God but God. Unique and without division. Muhammad is his prophet. The blessing of God be upon him. The best of men after the prophet of God - the blessing of God be on them - (are) .. ..... 'Alī son of Abū Tālib. Let God be satisfied with all of them.

The effaced lines must have contained the names of the first three Khalifas. The third text is in six lines of Kūfic and gives the historial inscription:-

> This minaret was constructed from the money of the Isfahsalār Abi'l-Fath b. Muhammad b. 'Abd al-Wāhid ..... before approaching God - May he be praised and exalted ! - and in the desire of His satisfaction and of His great reward - May God in his mercy agree to accept it ! It was finished in the year 501. (1107-8) (Godard 1936: 361-3).

21. Sāva, Masjid-i Jāmi'.

The minaret of the Masjid-i Jāmi' at Sāva is undoubtedly one of the most richly decorated of all Iranian minarets, both as regards the complexity of the patterns employed and the delicacy of the technique. The minaret is a free-standing cylinder over 14m. high standing outside the present northeast corner of the early sixteenth century Masjid-i Jāmi'. At the base the circumference is 14.60m., but since the entrance is now only obtained through a small door high on the west face, which was impossible of access, it was not possible to make any further measurements. The upper section of the minaret is missing, and it is interesting to note that on the third Safar 561/ Jan, 1166, 'a mightly wind blew the tops off the Sāva minarets, as well as doing other damage'. (Rāvandī 1921: 291-2). Apart from the missing upper section there is a vertical section of the decoration missing on the north face.

The minaret has two inscription bands which read:-

> .... May God prolong the life of his slave, friend, and devoted friend, the Imam ..... (al-Mustazhir bi) llāh, Amīr of the believers !
>
> .... this minaret (was built on the order of the Sultān Gh)y(āth) al-Dunyā wal-Dīn Abū Shujā' Muhammad ibn Malik Shāh in the year 504 (1110-1). By the effort of the master ..... (R.C.E.A.: 2943).

The decoration is in six main zones separated by a series of complicated guard-bands. Of these six zones, the lowest is a double zone; first a fretted brick design between guard-bands of alternate discs and rhomboids

between single stretchers, above which is a brick fret design which appears to be in a form of open Kūfic lettering (Pl.61 ). The next main zone is an open brick fret design above which is the lower line of the brick Kūfic inscription. This followed by a further open brick fret design, the second Kūfic inscription, and finally the remains of a third open brick fret design (Pl.60 ).

Each of the main zones is bounded by a series of guard-bands which probably have their origin in the earlier bead and knuckle-bone design, but which represent a considerable advance in technique. The brick assumes an almost lace-like texture, with just the outlines of the patterns in raised brick. While some of the patterns remain as simple bead and knuckle-bone shapes, others are doubled and tripled with correspondingly complicated interlocking connections. The effect is extremely delicate, and contrasts strongly with the heavier outline of the brick fret designs. A similar effect is achieved with the finials of the inscriptions, which are regularised to form a pattern band using this delicate fret outline. The earliest example of this technique is on the minaret of the Masjid-i Jāmi', Dāmghān (Catalogue 6), but the Sāva example represents a considerable advance on the 'S' shaped bricks which formed the Dāmghān guard-band.

In addition to the superb brickwork, the Sāva minaret was also ornamented with a considerable amount of carved stucco. Brick plugs of considerable complexity filled many of the interstices between the raised brick patterns, some of which were even embellished with Kūfic script (Pl.61 ). The inscriptions were also originally covered with stucco and probably set against carved stucco backgrounds. See photograph of Dawlatābād (Pl.120).

22. Khusrawgird.

The minaret of Khusrawgird is a free-standing conico-cylindrical shaft, 22.50m. high, currently standing on a square base, 5m. square by 2.70m. high. This in turn stands on a platform 15m. square and 3.30m. high, giving a total height of 28.50m. The newly restored base and platform were in fact the work of Naṣr al-Dīn Shāh subsequent to the damage suffered by the tower during the Afghan invasion of 1722, so that it is impossible to ascertain the style of the original base, which one assumes to have been a continuation of the shaft. The surrounding area has been entirely ploughed so that there are no visible traces of any site adjacent to this tower, although future archaeological work may reveal the traces which were apparently still visible when O'Donovan visited the site in the late nineteenth century. The top has also been restored, but O'Donovan also noted the marks of a wooden platform which had already disappeared at the time of his visit. Yate suggests that this was the site of Baihak/Bayhaq, but this was undoubtedly modern Sabzivār, some 9km. further east, which became the capital after the destruction of Khusrawgird by the Mongols in 1221.

There are two inscription bands on the minaret, which have been partially translated to read:-

> Has ordered the building of this minaret ..... Abū al-Kāsim .....
> (in the year) 505 (1111-1112) ..... (R.C.E.A.: 2949).

These are written in a simple brick Kūfic which presumably, as in analagous inscriptions on other minarets, was originally covered with a stucco infill. The finials and the uprights of the inscription are regularised to produce

a decorative frieze of which only the moulded brick element remains.

The main decorative patterns consist of bands of stretchers spiralling in both directions to form a diaper of nearly square lozenges, the field of each being formed of soldiers, or, in one band, of depressed stretchers.. These represent designs current in Khurāsān, and which have already been examined in a number of other minarets (Pl.64 ), however an additional element of sophistication enters in certain bands which have a more unusual design, including a greek cross, each arm of which is formed of cut bricks (fig. 24 ). There is also a fret design below the crown which continues the earlier Khurāsānian tradition ( Pl. 63 ). As in the almost contemporary minaret at Sāva (Catalogue 21), it is in some of the guard-bands that the most significant development occurs. Again these must be assumed to have originally had a stucco filling in order to delineate the patterns more carefully, many of which are identical with those of Sāva. There are also a number of simple guard-bands representing a development of the simple rhomboid and disc design, with rhomboids, squares and discs alternating.

23. Bistām, Shrine of Bayazid.

The town of Bistām has grown around the tomb of Abū Yazid Tayfur ibn Īsa, known as Bayazid al-Bistāmi, who dies either in 261/875 or 264/877-8. Wilber (1969: 127) notes traces of what appear to be pre-Saljūq walls in the shrine area, but the earliest dateable remains are those associated with the inscription which gives the date 514/1120, that is a section of wall on which this inscription appears, now incorporated into the rebuilt mosque, and the minaret which is bonded into this wall.

The minaret is a slightly tapering cylinder on a square base, with a flaring muqarnas supported crown. Recent excavations have revealed more of the lower section of the square base and the adjacent wall foundations, so that the minaret presents a more balanced appearance with a higher base than was formerly visible, much more in accordance with the twelfth century format. This base is in plain brick bond, above which the lower section of the cylindrical shaft is in single stretchers with wide rising joints. A raised chain fret guard-band leads to the next zone consisting of diagonal bands of single stretchers forming a diaper of regular lozenges, the ground of which is formed of soldiers which are set back from the stretcher bands. The next zone is an inscription band in floriated Kūfic set between guard-bands of a raised chain fret, very similar in style to those which ornament the minarets of Sāva and Khusrawgird (Catalogue 21 & 22). This is followed by a zone which is almost identical to fret designs which appear in Simnān and in the Tārīk Khāna, Dāmghān (Catalogue 4 & 5) (Pl.69 ).

While the lower section of the minaret looks back or refers to almost contemporary minarets, the upper section contains important innovations which prefigure some of the developments of the second half of the twelfth

century. I am particularly referring to two ornamental bands which frame the next inscription band, and have a cut brick base on which an elaborate stucco design unfolds (Pl.68 ). These represent a vegetal style of ornament totally foreign to the remainder of the minarets under discussion, and which appear in a more advanced form on the minaret of Jām (see discussion in Chapter V and Pl.124). Its appearance in Jām led me to speculate on the possibility of an Indian origin, or at least influence for a design which certainly has a relationship with the Indian lotus form, but whether such an origin can be suggested for the Bistām minaret, I cannot as yet determine. Certainly,as can be seen from the photographs, it has a flowing, vegetal form which is quite unlike the normal geometric configurations of other contemporary minarets.

Above this set of decorative bands with their attendant guard-bands, rises the muqarnas of the crown. This is in three main tiers of niches, above which two rows of flattened lozenges support the upper rim of the minaret, originally doubtless crowned with a wooden balcony, as in the Simnān example, of which this represents a considerably advanced development. In particular the uppermost niche heads are ornamented with a geometric floral pattern in stucco and brick (Pl.67 ).

The entire minaret is most richly decorated, with stucco infills and brick-plugs, now only visible on the inner face where it has been protected by the mosque buildings. The inscriptions are in large Kūfic characters sculptured in relief, originally having stucco infills and s urrounds to give an even richer effect. Only a fragment of one of these two bands is legible, and reads:-

(Abū (?) ) 'Abd al-Rahīm Khalid ibn Kāsim (?) ..... (R.C.E.A.: 3210)

Unfortunately at the time of my visit it was neither possible to enter the minaret, nor to take any measurements, so that I am unable to quote any.

## 24. Gār, Minaret

Gār lies a few kilometres east of Isfahan on the south bank of the Zayanda Rūd. Since Smith (1936: 323-7) published his report the base of the minaret has been restored as has the top, the stairs, however, are still so badly damaged that they were impossible to measure correctly and dangerous to mount. The nearby ruined Mongol domed cube contains the remains of a fine stucco mihrāb.

There are no traces of any wall attachments, so that the minaret was always free-standing. It is a slightly tapering cylinder on a tapering octagonal plinth. At the time of Smith's visit he was able to ascertain that the minaret stood on a rubble stone foundation with a friable mortar of sand, pebbles, lime, and ashes. This is now entirely covered by a new stone and concrete base. The total height of the minaret is ca. 21m. At the level of the staircase the diameter is ca. 5m., while at the top of the shaft it is 4.7m. The bricks forming the interior of the shaft are 22 by 4cm. and 24 by 5cm.

Just below the top facing the qibla is a large window, 62cm. wide. This has now been bricked up in the recent restorations. The remains of the supporting curved bracket are, however, still visible, so that it is still possible to distinguish what Smith called 'a niche with pointed, arched profile'.

The minaret has a double spiral staircase, with doors opening on to the eastern and western faces of the octagon. The eastern door is now blocked, but the balcony opened off this staircase. The stairs were so badly damaged that it was impossible to measure them. Smith (1936: 325) does not mention the double spiral staircase. See Plan (fig. 12 ).

At the top of the octagonal plinth is a line of Kūfic in brick mosaic, only existing now on four sides of the octagon. This inscription reads:-

> In the name of God, the Compassionate, the Merciful. Ordered the building of this minaret the ascetic Saiyid al-Rū'asā' al-Kasim (sic) Ahmad b. Ab (sic) al-Kasim in the year 515 (1121-2).

(Godard 1936: 363).

The rising joints of the brick background are ornamented with a simple three pronged impression, while the inscription is framed by two guard-bands: the upper one has square shaped half-bricks arranged in groups of four to form alternate vertical and horizontal rhomboids; the lower is of alternate brick diamonds and rhomboids (Pl. 71 ).

Below this inscription, on two faces of the plinth, the wide rising joints are ornamented with brick plugs, so disposed to form a 45 degree diagonal diaper of what Smith describes, after Herzfeld, as rectangular naskhī. The remaining sides of the plinth are faced with carefully bonded plain brick, laid with minute rising joints. The shaft is ornamented with a similarly angled rectangular naskhī formed by a widening of the rising joints.

25. Sīn, Masjid-i Jāmi'.

Sīn is a small village some 20km. north of Isfahan. The Masjid-i Jāmi' contains an interesting sanctuary, dated by inscription to 529/1134-5, and also a baked brick minaret dated to Rajab, 526/May-June 1132.

The tapering cylindrical minaret rests on a high, tapering octagonal plinth, which in turn is supported by a square base with one chamfered corner. The total height of the octagonal plinth and the shaft is 29.4m., to which must be added approximately 3m. for the buried square base, which is now totally enclosed by the later mosque building. There are traces of a wall attached to the southeast face of the minaret, possibly the original outer wall of the mosque, so that the minaret was not free-standing.

While I am in agreement with Smith (1936:327-31; 1939: 1-10) on the height measurements, my own measurements of the base disagree with his in that he states that, at the base of the shaft, the diameter is 3.10m., whereas no matter how I re-read my figures, I cannot make this more than 2.46m. Since my measurements of each face of the square base in each case fall within 2 or 3cm. of this figure, and I fail to see how a cylinder can be larger than the octagon on which it sits, or the square on which the octagon is placed when all sides are flush, I must assume that Smith made a mistake in his calculations. The main difference seems to be in the width of the staircase, which Smith calls 93cm. and which I read as 57cm., which, on overall measurements, would give a difference of 72cm., more than enough to cause the difference. Brick sizes vary in the interior from 20 to 22cm. square by 4.5cm. thick. The exterior bricks range up to 27 by 4.5cm. Smith found sizes in the base and plinth up to 39.5 by 6cm. Access to the spiral stair is by two openings, one in the base of the octagon, the other low

in the shaft. Midway up the shaft facing the qibla is a large window with a triangular balcony similar in position to those of the Chihil Dukhtarān and Gār (Catalogue 20 & 24). Above this window and the other openings are fragments of wooden relieving lintels, set flush in the brick work above their segmental arches. Because of settling at the window the shaft has buckled.

The shaft decoration is by a diaper of brick stretchers; their wide rising joints make interlacing spirals that form and frame diagonally disposed squares with accented centres (Pl. 72 ; fig. 27 ). According to Smith 'an umbriferous pointing of geometrically pitted gaç plugs was projected, but it was not carried beyond a small area near the base of the shaft'. He refers to the pointing at Barsiyān and Gār (Catalogue 17 & 24).

The top of the shaft has a damaged one line Kūfic inscription in 'brick-faience-mosaic technique'; the turquoise glaze is on the outer face of the cut-brick characters. The inscription is from verse 33 sūra 41, and reads:-

> In the name of God. And who speaketh fairer than he who biddeth to God and doth the thing that is right .....?

On the southeast face of the square base, partly concealed by the earth fill of a later vault, is a damaged brick-mosaic, four line Kūfic inscription. Again the tooling of the rising joints is similar to that of Gār. This is an historic inscription, and gives the name of the founder and the date:-

> In the name of Allāh the Compassionate, the Merciful. Ordered the building of this minaret the servant, the sinner, he who

begs the pardon of Allāh the Exalted, Abū Ismā'īl Muḥammad b. al-Ḥusain b. 'Alī b. Zakarīyā, may Allāh accept (it) from him; And that in Rajab of the year 526 (May-June, 1132 A.D.)

(Miles 1939: 11-2).

26. Isfahan, Masjid-i Sha'īyā.

Since Smith (1936: 331) visited it, the Masjid-i Sha'īyā has been completely rebuilt. Situated just to the northwest of the Īmāmzāda Ismā'īl, the mosque now fronts the great courtyard, and the high octagonal plinth of the minaret is completely enclosed within the side arcades of the mosque. The shaft of the minaret was truncated and a guldasta added, built around the central column of the spiral staircase, which remains jutting above the shaft for some 2m. This column was ornamented with faience plugs when the guldasta was added, probably in the nineteenth century. Without the guldasta, the minaret stands ca. 10m., of which the truncated shaft above the plinth forms 5.3m. The lower doorway of the minaret, 62cm. wide, has been completely blocked, but according to Smith the stair is normal.

Both the octagonal plinth and the lower section of the shaft are covered with carefully bonded plain bricks, above which is a narrow ornamental band of alternate discs and rhomboids between single stretcher guard-bands. Above this band the wide rising joints of the bond make a 45 degree diaper of large crosses and small lozenges (Pl.75 ).

Smith has suggested an early twelfth century dating for this minaret, with which I am in agreement.

27. Isfahan, Manār Guldasta.

The lower section of this minaret is completely concealed within the walls of the later mosque, so that it is impossible to tell whether the cylindrical shaft stands on an octagonal plinth, as might be imagined from the nearby Masjid-i Sha'īyā minaret (Catalogue 26), nor is it possible to tell whether or not the minaret was originally free-standing. Both the minaret and the mosque take their names from the late guldasta which has been built on the truncated shaft, and from which the adhān is still given. Unlike the Masjid-i Sha'īyā the shaft has been completely levelled to accommodate the guldasta. Some 3m. of the shaft is now visible, while ca. 6m. is concealed within the walls of the mosque. The stair is reached by a 64cm. wide door at roof level, although the stairs continue down to a now-blocked entrance at ground level. At the top the minaret has a diameter of 2.22m., with the wall only 21cm. thick. The stairs have a height of 27cm., width of 63cm., an inn er depth of 9cm. and an outer one of 25cm. The bricks used in the interior are 20 by 4cm.

The lower metre of the exposed shaft has a carefully bonded plain brick surface, above which is an ornamental band of alternate rhomboids and diamond shaped bricks set between single stretcher guard-bands. This gives way to a pattern of rectangular naskhī in a 45 degree diagonal diaper formed by the wide rising joints of the bond (Pl. 77)

Smith suggests that this is later than the Masjid-i Sha'īyā, but still within the Saljūq period. I see no reason to disagree with this opinion.

28. Fīrūzābād.

The small village of Fīrūzābād is situated near the ruins of the city of Turshiz which was first attacked by Hulagu, in the mid-thirteenth century, and finally destroyed, along with most of the remaining towns of Khurāsān and Sīstān by Tīmūr at the end of the fourteenth century. The minaret is free-standing, and separated from the remains of the rest of the town. No excavations have been undertaken in the vicinity of the minaret, so that it is impossible to tell whether or not it was built in association with a mosque, and as such was used as a mi'dhana, or whether it was only used as a watch-signal tower. It is perhaps significant in this instance that the inscription uses only the word manār, and that no section of the inscription appears to be Qurānic, in which case it should not be called a minaret but a tower or mīl.

The tower is a free-standing cylinder, originally resting on a now destroyed square base of no great height. The lower section has been recently restored in brick, but earlier photographs by Diez (1918: Pl. 10, 3 ) show how far the base was eroded. The present height is 17m,, but the upper section has been destroyed and it must have been higher originally. The interior spiral staircase has now been completely destroyed, and at present there are no remains of any central column around which it might have revolved. Since Diez does not mention any details in this respect, other than the general ruin of the staircase, it is not possible TO SAY whether there ever was a central column, or whether the staircase revolved upon itself as in Simnān and 'Alā (Catalogue 5 & 16). The wall of the tower is 1.30m. thick, and is made of bricks 26 by 5.5cm. Judging by the remnants of the upper section, the facing decoration was a revetment, not bonded integrally to the structure.

The lowest zone consists of single stretchers set with wide rising joints in which there are traces of stucco brick-plugs. Above this is an inscription band in a highly decorated floriated Kūfic set between guard-bands of alternating bead and a form of double knuckle-bone design. The inscription reads:-

> In the name of God! This manār was built ..... by order of Sheikh 'Alī al-Mukhtār, the Sayyid 'Amīd al-Ḥadra Abū Sa'd Muḥammad ibn Manṣūr, may God accept from him (this work) ..... the Sheikh, the Doctor Abū Sa'īd 'Alī ibn al-Ḥussain.

(R.C.E.A.: 3581).

Above this band the main decorative zone of the tower is in a form of herringbone pattern formed by alternate bands of stretchers and soldiers, which bands form lozenge shapes in the upper section of this zone. Descending vertically from the top of this zone is a single line inscription in simple unornamented script which says:-

> Work of Sa'īd ibn Ja'far the builder, may God pardon him.

(R.C.E.A.: 3209)(Pl. 80 ).

The topmost remaining section of the tower has an interesting diagonally ascending pattern which may in fact be based on a pattern formed from a square Kūfic, but I have not been able to decipher this possibility (fig.28 ). Between these last two zones is a guard-band of two rows of alternating bands and elongated regular hexagons, probably a simplified form of the earlier knuckle-bone shape.

Diez (1918: 51) suggests a date early in the thirteenth century, or at the earliest, the end of the twelfth, but given the fact that most new patterns tended to originate in the greater Khurāsān area, and the great advances in the use of colour which took place in that area under the Ghūrids, I would tend to place it slightly earlier, in the first half of the twelfth century.

29. Zavara, Masjid-i Jāmi'.

The minaret forms part of the original structure of the mosque, built in 530/1135-6 (Godard 1936: 298). It consists of a now-truncated cylindrical shaft set on an octagonal base, the northeast side of which is prolonged to form a rightangle with the exterior wall of the mosque, which the minaret adjoins on the southeast side of the octagonal base (Godard 1936: 209 fig. 143). As it now stands, the minaret is 11.70m. high. It is entered directly from within the northwestern rīwāq of the mosque through an angled corridor. The stairs are normal, revolving around a circular core.

The octagonal plinth and the lower section of the shaft to the height of the roof of the mosque, are of closely bonded plain brick, with a space where there was presumably an inscription panel halfway up the northern face of this section of the shaft (Pl.81 ). Above this is an ornamental band of alternating light and dark-blue tiles, the turquoise tiles being hexagonal, while the dark-blue are spindle shaped to fill the intervening space. This is the first occasion on which I have come across this pattern, which later appears in the minaret of Nigār, and is the first occasion of the use of dark-blue faience as an exterior ornament.

Above this band is a zone of 45 degree diagonal rectangular nashkī bond, at which point the original minaret is truncated, the upper metre being formed of a much later restoration to form a balustrade at the top of the minaret. The naskhī section is formed by the wide rising joints of the bond, which section is pierced by a single window of inverted arrow-head shape.

30. Ardistān, Masjid-i Jāmi'.

As it now stands the minaret of the Masjid-i Jāmi', Ardistān, consists of a slightly tapering cylinder, the base of which is completely enclosed by the later madrasa, but which formed an integral part of the mosque building at the time of the construction of the four īvāns, that is 555/1160-1 (Godard 1936: 206 fig. 141, 290). It is entered directly from within the side rīwāq attached to the northwestern īvān, in a similar position to that of Zavara. According to Godard, the minaret fell down and was replaced by the present one in the sixteenth century. Certainly unornamented as it is, it does not fit into the general run of twelfth century minarets, particularly when that of Zavāra incorporates a number of new features, and the Zavāra Masjid-i Jāmi' was itself apparently the model for the four īvān construction at Ardistān.

It is therefore possible to say that of the present 13.31m. of the minaret, some 10.90m., the height above the roof, which has no immediately appreciable break in bond, is probably of the sixteenth century, while only the incorporated base forms part of the original twelfth century minaret.

## 31. Gurgān, Masjid-i Jāmi'

The Masjid-i Jāmi' at Gurgān, formerly Asterābād, contains a baked brick minaret apparently of the twelfth century. Local tradition insists that the minaret is older than the mosque, and that it is in fact Saljūq. In form it is typical of the Mazandaran area, a slightly tapering cylinder, with a large wooden beam platform surmounted by a heavy tiled roof, this latter obviously of recent construction. The lower part of the minaret is enclosed in the later mosque building, and it was impossible to ascertain whether or not it had originally been free-standing. As measured in the thickness of the wall inside the window, the bricks are 20cm. square by 3cm. thick.

As the minaret emerges from the roof of the mosque, the facing bricks are in single stretchers with wide rising joints. There are sufficient traces of the old mortar remaining to indicate that this was raked with a single vertical groove. The inscription is set between guard-bands of knuckle-bone pattern framed by single stretchers. The inscription itself is in a strange form of Kūfic, which has been so restored as to be unreadable; there are a number of recognisable letters, but they do not make any sense (Pl.85). A section of the inscription is hidden behind the roof of the present mosque, and were this to be uncovered it might help to decipher part of the remainder. As part of the decoration of this inscription, which also bears traces of red and white paint, there are a number of wing-shaped bricks coloured red above a white plug. These form an upper register to the inscription. In his description of the mosque, Rabino (1928: 73-5) makes no mention of this inscription.

A second band of single stretchers leads to the main brick pattern, which is not at all in accord with other twelfth century patterns, but appears to reflect a local form (Pl. 84). A similar pattern appears on the nearby Īmāmzāda Nūr, to which a fourteenth century date is assigned, although with reservations.

A narrow band of single stretchers and a further narrow band of the previous style of pattern is crowned by a single row of angled bricks above which the platform rests on a further six rows of stretchers, probably heavily restored (Pl. 85).

A number of significant pattern details would place this minaret within the twelfth century, as suggested by local tradition, but confirmation must await a more successful attempt at the inscription (Hutt 1970: 204-5).

32. Khuranaq, Masjid-i Jāmi'.

Khuranaq is a village 87km. northeast of Yazd in the Dasht-i Kavīr. It is built on the side of a hill overlooking a river valley, so that the roof of one house forms the terrace of its neighbour. The mosque is built in a similar fashion, with the minaret on the uppermost level, rising above the town so that it is visible from the road. Its present appearance indicates a two-stage construction, but this is the result of a nineteenth century reconstruction. Originally the minaret was a simple cylinder, but apparently the upper section decayed, leaving only the central core around which the double spiral staircase revolved. At thetime of the restoration, an obviously Qajar brick decoration was fitted over the top of the lower section, projecting to form a balcony cornice, within which the refaced central section rose, reduced to almost half its original width. This reduction makes it almost impossible to climb the upper staircases, but examination of the interior surfaces confirmed that there was no break in bond, and therefore the upper section is of the same date as the lower (Pl. 86 ).

The remaining original section of the lower part is in single stretchers set in plain bond. Nothing remains of any other part of the original decoration.

Within the mosque is a finely carved tombstone dated 499/1106 (Hutt 1971: 160), which would suggest a possible twelfth century date for the foundation of the mosque and minaret. One part of the minaret staircase opens into the mosque courtyard, whereas the other opens onto a washing area outside the mosque precincts.

The presence of nearby nineteenth century caravanserais is indicative of the importance of this route during that period, and is corroborative of the suggested restoration date for the mosque and minaret.

## 33. Sabzivār, Masjid-i Pāminār.

At Sabzivār, known formerly as Bayhaq, the Masjid-i Pāminār has a minaret which can be assigned to the twelfth century. The lower part of this minaret is completely enclosed within the later mosque building, and it was not possible to examine this to determine whether or not it had originally been free-standing. In the same way it was not possible to make any measurements of the interior or of the brick sizes.

Some 7m. of the minaret remain visible above the mosque, and this is divided into five main sections. The lowest has an interlocking rectangular pattern, highlighted by the addition of small squares of turquoise faience, above which is the flowing brick inscription set between lattice guard-bands (Pl. 88 ). The pattern above the inscription is exactly the same as the lowest one, with the omission of the turquoise insets, and terminates with a band of indented stars. The two lower zones have a wave-like pattern, which is reproduced on a larger scale in the upper register, each wave being formed of soldiers or stretchers. Unfortunately the interstices between the bricks have been filled with cement during a recent restoration, so that it is only with extreme difficulty that the pattern can be perceived at all. A drum of single stretchers in plain bond supports the octagonal cornice, upon which rests the much later wooden cupola. The cornice bears traces of stucco and blue paint, but I would suggest that this entire section belongs to a much later restoration.

The inscription is unfortunately illegible, although sufficient can be distinguished to show that it was in some form of flowing script, which was executed with great difficulty in brick, and presumably had a stucco covering to make it more legible. The combination of this cursive script

and the turquoise faience insets, must indicate a date in the second half of the twelfth century, although there is none of the strength of design associated with the contemporary Ghūrid constructions (Hutt 1970: 205).

34. Tabas, Madrasa Daw Manār.

Tabas is a large oasis, approximately mid-way between Mashad and Yazd along the direct desert road across the Dasht-i Kavīr. The great minaret of the Masjid-i Jāmi' has fallen and all traces of its existence have been removed (Catalogue 44), but the twin minarets above the portal of the madrasa are still in existence, although now so restored as to be unrecognizable. The wide rising joints which formed the patterns on the minarets have been filled with cement in a recent restoration, so that the twin minarets resemble nothing so much as ungainly factory chimneys. Fortunately Godard (1936: 300, fig. 197) published a photograph of them taken prior to this act of vandalism, and it is from this photograph that the following description is taken.

Although the madrasa was much restored in the time of Hasan Khān, who replanned much of Tabas during the Safavid period, I am of the opinion that the basic construction is that of the twelfth century, as the plan shows (fig.13 ), and that the minarets are in the correct position on top of the entrance portal. The portal is 8.81m. high, and each of the minarets is 10.11m. high, thus nearly 19m. from the ground level. The diameter at the top is 1.40m., while the circumference at the base is 7.51. Two steps lead up to the door of each minaret from roof level, but these are not bonded so may not be original. As far as can be judged from the Godard photograph, the patterns are formed by wide rising joints in the bond, and are divided into three main zones. Between the two lower zones is a guard-band of 'S' shaped bricks, while between the second and third is a light blue faience inscription framed by knuckle-bone guard-bands. Above the third zone is a guard-band of intertwined rope design, while above this a row of niches supports a cavetto cornice, the face of which

apparently has a decoration of semi-circular bricks set in a fish-scale pattern.

Wilber (1939: 37, n. 65; 38, fig. 15) has described the inscription as follows:-

> 'Nearly every letter is built up of a number of small segments. Some of the segments are simple rectangles which have been cut from larger tiles. The inscriptions are so far above the ground that it is difficult to tell whether the glaze runs over the edges of the pieces, but many of them were clearly moulded into their distinctive shapes. The conspicuous floriated ends of the upright letters show a number of minor variations; this feature suggests local workmanship, for had some important center of ceramic production been engaged in shipping large quantities of letters to be used in setting up inscriptions in the smaller towns and villages the mass production would have tended to make the individual details uniformly alike'.

The inscription has been translated as follows:-
on the right-hand minaret;

> The Master, the Amīr, the Glorious, Sultān of the Amīrs has ordered it to be constructed.

on the left-hand minaret;

> Muhyi 'l-haqq va 'l-dīn Abū 'l-Mufakhir Muhammad ibn Fadl ....
> May God make (his reign) endure.

(Godard 1937: 46-9).

From the use of faience, and the general design of the inscription and the patterns used in these minarets, I would date them to the second half of the twelfth century.

35. Ardistān, Masjid-i Imām Hasan.

The Masjid-i Imām Hasan is all that remains of a Saljūq madrasa ., and consists of the small mosque originally adjacent to the main southern portal. From the ground plan (fig. 16 ) it has been possible to reconstruct the portal to show that it originally possessed two minarets rising directly from the sides of the portal itself. The conjectured height of the portal is 13m., which is approximately all that remains of the minaret. At the time when Godard (1936L 299, fig. 196) took his photograph, there was a further section of some 5m. still extant, which had a pattern of a diaper basket-weave formed by wide rising joints in the bond. This entire section has now been demolished, so that all that remains of the minaret is of plain brick.

The portal itself has a flowing inscription, coloured turquoise, set against a ground of stucco arabesque framing the portal opening, while there are other inscriptions in turquoise enamelled Kūfic against a scroll stucco ground in each of the niches. I have already demonstrated the resemblance between the remains of the mihrāb and that of the Masjid-i Jāmi' in Ardistān (Hutt 1970: 203-4), and taking this into consideration with the now-disappeared minaret pattern, I would assign this minaret to the second half of the twelfth century.

## 36. Isfahan, Manār 'Alī.

This is the tallest minaret in Isfahan, and the second tallest in Iran, the tallest being that of Zīār (Catalogue 39). A certain amount of restoration has taken place, particularly at the level of the two cornices, which tends to give the minaret an impression of newness, assisted by the use of blue faience for the upper inscriptions, however, if it can be contemplated without any such mental reservations, this minaret and that of Sārabān are two of the most powerful and graceful realisations of the Saljūq period.

I was unable to enter this minaret, and so must rely on Smith's measurements (1936: 332-7). Although it is impossible to examine the base, which is now incorporated in the mosque of 'Alī, I would concur with Smith in thinking that it was isolated and without a plinth.

> 'The circular shaft is composed of three superimposed shafts of diminishing proportions, each of the lower two crowned with a flaring cavetto cornice not unlike an Egyptian campaniform capital. The present height is 40.35m. to the first cornice; the middle section is ca. 7m. which, with ca. 0.50m. of the present top section, give a total height of ca. 47.85m. The original height must have been over 50m. At the ground level, the exterior diameter is ca. 6m., the shell is 1.45m. thick, and the circular core is 1.60m diameter. The stair is normal. At the first landing the diameter (under the cornice) is 2.86m. and across the cornice it is 3.85m. The shell is here 0.58m. thick, the core is reduced to 0.32m. The second section starts with a diameter of 2.41m., the shell is 0.38m. thick,

and the core 0.32m. in diameter. Higher examination was impossible as this section is unsound'.

Since the minaret has been restored I assume that this last is no longer the case, but I was unable to check this.

'The most interesting part of the construction is that of the lower cavetto cornice. To make it, the entire wall for the 0.93m. cornice height, as well as the 0.50m. projection, was built of large bricks laid vertically and radially, in a corbelled mass. One has only to contrast this katār construction with mukarnas to appreciate the difference. There was a wood platform on this cornice, and doubtless also on that above. The fabric is sound except as noted.'

At the point of its emergence from the surrounding mosque, the minaret shows approximately 2m. of closely bonded plain brick, above which is a 60cm. band of what Smith describes as 'brick-mosaic rectangular naskhī', which is often described as square-cut or seal Kūfic. About two-thirds of this are concealed by later structures. Above this is a band of about 3m. of 45 degree diagonal rectangular naskhī diaper, the pattern being formed by the wide rising joints of the bond. This gives way to a most interesting pattern showing a large-scale, geometric knotting or interlace, containing six and eight-pointed stars, and other forms created by the inter-connection of these stars. Apart from a diamond shape in the centre of each eight-pointed star, formed by the wide rising joints, the whole of this pattern band appears to have been carved in situ, the closely bonded plain brick having been incised to form an 8cm. wide rectangular channel. As Smith remarks, this appears to be a new technique. The next major zone has a

pattern diaper of diamonds framing smaller diamonds formed by the wide rising joints of the bond. Smith suggests that this is formed of pre-cast brick-mosaic. Above this is an inscription in rectangular naskhī of brick mosaic, originally of turquoise faience. Two guard-bands, also originally of turquoise faience, separate this inscription from the next one in plaited Kūfic, the upper strokes of which are prolonged into the cavetto cornice. During the recent restoration the turquoise faience insets of this inscription have been replaced.

The second stage has a plain band to correspond with the missing guldasta, above which is a diaper of diamonds with an accented centre formed by wide rising joints. This is in turn surmounted by a further brick-mosaic inscription in rectangular naskhī framed between two guard-bands. Smith remarks traces of turquoise glaze, but these have diappeared in the restoration and have not been replaced. The shaft terminates with a band of single stretchers with wide rising joints before the campaniform cavetto cornice of small bricks laid in corbelled courses. It was not possible to ascertain whether or not there remained any decoration of the third stage.

The uppermost inscription repeats:-

There is no God but God.

The plaited Kūfic below the cornice:-

The power is God's.

The naskhī inscription under it:-

There is no God but God. Muḥammad is the Prophet of God.

The lowest inscription, as far as it can be read, cites verse 16 of sūra 3 (Godard 1936: 364).

Smith's analysis of the use of pre-cast brick-mosaic slabs would seem to indicate a late date, and apparently Herzfeld thought that it might be attributed to Oljeitu, but all the pattern indications would appear to place it in the second half of the twelfth century.

37. Isfahan, Manar Sārabān.

This minaret closely resembles that of 'Alī, than which it is only a few metres shorter. Like the minaret of 'Alī it is a tapering three stage cylinder, the base now being surrounded by a base ring 5cm. wide, which is a later addition. The door is partially blocked and, at the time of my visit, it was not possible to enter the minaret. The door is roofed with four wooden beams which appear to be original, and which fit into the walls of the 65cm. wide doorway. Apart from these additions, I quote Smith's description in full (1936: 340-1).

> 'An isolated, round, three-stage shaft, without plinth. The present height is ca. 44.2m. of which ca. 36m. is the lower section, ca. 6.2m the middle, and ca. 1.5m. the top. The base diameter is 4.04m. At the stair entrance the shell is 0.72m. thick, the core is 0.87m. diameter, the passage is 0.68m. wide. The normal stairway is entered ca. 7m. up the shaft, by a bridge from some other building which has now disappeared. But for the list to the west, the fabric is essentially sound.
>
> Decoration: On the south-west side, at a height of ca. 9m. is a shallow, empty square panel which doubtless held an inscription. The lower shaft treatment is in four zones: the lower is plain, the next is a diagonal rectangular naskhī brick-bond diaper like that of Gār, above an incised channel forms a geometric network design which is a less precise variant of that on 'Alī, while the last zone is a collar of turquoise faience-brick-mosaic of a stylised floral kūfiinscription, guarded by turquoise bands. Another inscription band in rectangular naskhī, executed in small

turquoise squares in a gaç bed (gaç-faience-mosaic), is between the third and fourth zones. A single band of turquoise glazed alternate lozenges and discs separates the first and second zones. The high three-tiered cornice is executed in katār work, its stability is attained by the generous use of wood corbels and cantilevered brick templates rather than by niches, which are a revetment of brick-faience-mosaic thickly backed by gaç. The design of the niche profiles and plans reduces the cornice mass and overhang to a minimum. The niches are in two forms, the lower tier a true niche on colonettes, with normal, stilted, four-centred, pointed profile, while those on the two upper tiers have heads only, with stilted, four-centred profiles terminating in elongated, acute, salient points. The faience, on thin units, outlines the inner profiles.

The second section shows a decided entasis. It has a plain zone to correspond to the guldasteh (which was here roofed), a simple lozenge zone, a plain kūfi band in turquoise faience-brick-mosaic, and a flaring katār cornice designed like the middle tier of the one below. This platform also had a guldasteh.[1]

The three inscriptions state:-

The first, in blue faience;

There is no other God but God. (I say it) with a sincere and pure heart. Muhammad is the Prophet of God.

The second, also in blue faience, reproduces verse 33 of sura 41. The third in square Kūfic, brick-mosaic on a blue ground, names the Prophet and the four Orthodox Khalifas. (Godard 1936: 364-5).

Smith argues for a date between 550 and 688/1155 and 1289, with a personal opinion inclined to the earlier limit. From the epigraphic point of view, Mme. Godard (1936: 365) suggests a date between 525 and 550/1130 and 1155. My own opinion would be to place it at approximately the same time as I have suggested for the minaret of 'Alī, that is the second half of the twelfth century.

38. Kāshān, Manār-i Zayn al-Din.

This is an isolated truncated minaret, which now has a plaster shop built into its base. Because of the structural instability the top was recently demolished, and the minaret now stands 21.69m. high. At a height of 2m. above the ground the diameter is 3.75m. Bricks are mainly 20cm. by 3cm.

The overall decoration is formed by single stretchers in plain bond with wide rising joints, but there are two insert bands, the first ca. 4m. from the ground, and the second approximately the same from the present top. The lower one, which does not completely encircle the minaret, is surrounded by a guard-band of alternating turquoise faience discs and dark-blue faience diamond shapes. Nothing remains of this insert, and it possibly contained an inscription, judging by one or two brick fragments. The upper insert appears to have been purely decorative, consisting of a double row of pre-cast squares containing a light-blue knot pattern, between guard-bands of alternating turquoise faience hexagons and dark-blue faience spindle shapes. At a certain point the lower guard-band contains diamonds instead of hexagons, thus diminishing the turquoise coloured section, and indicating perhaps local manufacture.

The minaret is still unstable, and has a slight inclination, while at a point midway between the two bands is a bulge in its side. It was impossible to enter this minaret.

There is no trace of a balcony, and it may originally have been high to have been used as a mi'dhana. I would date it to the second half of the twelfth century.

39. Isfahan, Ziār.

This is the tallest extant minaret in Iran, and is situated approximately 25km. east of Isfahan near the south bank of the Zayanda Rūd. Like Smith (1936: 341-6), I was only able to ascend to the first balcony, the second section staircase not being in a sufficiently safe state to warrant the ascent. Some 50m. high, it is made of baked brick, the core of bricks 22 by 4cm., the inner facing bricks range from 20 to 23 by 4cm., while the outer facing bricks, as far as I could measure them, were either 22 or 23 by 4cm. I was able to find traces of wooden beams near the first balcony, and can record that there were wooden fronts to the steps of the staircase. Apart from these observations I am in agreement with Smith's description, which I will quote in full.

> 'From an isolated, baked brick, octagonal plinth, a circular shaft of the same material and incorporating turquoise faience, rises in three diminishing stages, the lower two each crowned with a campaniform katār cornice, the top with a curious, chest-like plinth. A domed mosque near its base has all but disappeared. The foundation, stairway, vault, and lighting are normal. The tapered, octagonal plinth is 5.5m. high. The bottom shaft has a lower diameter of 4.8m. where the shell is 0.86m. thick and the core 1.5m. diameter. The height of this section is 33m. to its platform. The second section, which I dared not ascend, starts with a diameter of 2.67m. with 0.55m. as the diameter of the core and 0.46m. the thickness of the shell. The total height is ca. 50m. The parts examined are sound.
>
> Decoration: The lower shaft is in six zones, the lower plain, the other decorated. In the plain zone, to the south-west,

is a square shallow, empty panel that doubtless once held an inscription. The third, fourth, and fifth zones are in diapered lozenges in the Sīn technique save that the fifth has small, turquoise glazed squares in the sunken targets. The second zone is of 45 degree diagonal rectangular naskhī repeats. The sixth zone has a kūfi band in turquoise glazed brick raised above a field of stretchers, and guarded by bond fret borders in cut brick. Below this is a band of turquoise lozenges and discs, the latter concave, with thickened and darker glaze in the center. The cornice shows a cyma-recta profile. There was once a wood platform reached by a pointed arched opening.

The second section has ornament in four zones, the lowest plain, the second in diagonal rectangular naskhī, the third in lozenge diaper, and the top a zone of square panels of naskhī repeats in turquoise faience-brick-mosaic, set between vertical brick, this guarded below by a band of squared panels of brick relief in a repeating rectangular naskhī. The cavetto cornice is laid in double stretchers. It probably had a wooden platform.

The third section has two zones, the lower in plain bond, the upper nearly so. Here are four narrow windows, each with a multi-foil, pointed arch, the fourth prolonged to make a door. The terminal is the over-sailing, rectangular brick-plinth, its side containing rectangular naskhī insets of turquoise faience.'

Smith inserts a note about the rectangular brick-plinth saying:

'its four corner posts recall those of the wood chest <u>sandūk</u>, or

railing zarīḥ over graves; further, the long axis is normal to the kibleh.'

Only one side with two of the posts now remains.

The inscription contains the verse 33 of sura 41, and also the affirmation that God is the greatest (Godard 1936: 365).

Again Smith places this minaret between 550 and 688/1155 and 1289, with a tendency towards the later date, while Mme. Godard prefers the middle of the sixth/twelfth century. My own opinion would incline towards the second half of the twelfth century.

40. Isfahan, Rahravān.

This minaret stands approximately 6km. northeast of Isfahan. While it is probable that it comes outside the exact date limits of this thesis, I have chosen to include it in the catalogue because it is certainly in the tradition of the other Isfahan minarets, and it is not possible to decide on an exact terminal date for this style. The bricks used throughout are 23 by 5cm., that is to say larger than those used generally, and without the various size distinctions usual in other minarets of this period. Like the Chihil Dukhtarān, it has an octagonal core, at least for part of its height, which is unusual, as is the square plinth, however it is certainly spiritually part of the series. Apart from these observations, I will again use Smith's account (1936: 346).

'Description: From an isolated, low, square plinth of baked brick, a circular shaft of the same rises in two stages, the termination of the lower one being a campaniform katār cornice. The plinth is 3m. square, the shaft rises tangent to it. The stair is normal save that the core is octagonal part of the way. This shaft and plinth are 25.88m. high, the total height is ca. 29.50m. There was a wood gallery. A shallow, empty, rectangular panel, ca. 9m. up on the north side, probably held an inscription. The workmanship is somewhat inferior to any of the examples noted above. The fabric is sound.

Decoration: The shaft is decorated in five zones. The lowest is plain, the second is with wide rising joints in vertical lines, the third has a normal, diagonal, rectangular naskhī bond, the fourth is an ordinary lozenge diaper, and the fifth is a collar

> of naskhī inscription in turquoise faience-brick-mosaic. This color is also used in three-guard-bands between the upper zones in a fret of bricks glazed on the edge. The quality of the faience is poor, and shows wide color variations.'

Smith places this after Zīār between 575 and 688/1179 and 1289, with a tendency towards the later limit. Mme. Godard, following the inscription, which reads:-

> There is no other God than God. Muhammad is the Prophet of God. (I say it) with a sincere heart. (1936: 363).

feels that it could be dated to the end of the sixth/twelfth century. I am inclined to place it at the beginning of the thirteenth century, but before the Mongol invasion.

41. Khurramābād, Mīl/Manār.

The tower of Khurramābād is an isolated baked brick cylindrical shaft approximately 24.90m. high, presently standing on a stone base 2.80m. high, giving a total height from present ground level of ca. 27.70m. The entrance was locked at the time of my visit, and it was therefore not possible to make more accurate measurements. The stone base is in fact rectangular, measuring 6 by 6.30m., and has obviously been restored recently, although it does include a number of worn uncut stones in situ, which suggest that the original tower, also had a stone base, although the dimensions may not be accurate. In so far as it could be measured, the tower is approximately 5.90m. in diameter, and is entered by a door on the west side, 30cm. above the base. This door is 1.98m. high and 0.90m. wide. From this a spiral staircase ascends in the usual counter-clockwise direction. On the east face, at ca. 15m. is a 2m. high opening, crowned with a blind arch in a rectangular frame (Pl.107). There are no traces of any balcony projection, so that the opening was presumably blocked with a wooden railing.

The shaft is unornamented, consisting of single stretchers in plain bond. They could not correctly be described as being set in wide rising joints, although these are 5cm. as opposed to the horizontal spacing of 3cm. There are, however, traces of a two finger rake in certain of the rising joints, a typical eleventh/Twelfth century practise. This is the sole ornamentation, the single stretcher corbelled crown being a modern addition.

It has always been suggested that the tower was only used as a signal tower, but the opening on the east face would be at the correct height for the adhān, although it does not face the qibla direction, as is usual in

most other minarets, eg. Chihil Dukhtarān (Catalogue 20). For the time being I proposed to leave it as an unidentified tower, which I would tend to date to the twelfth century.

42. Mīl northeast of Mīl-i Nādirī.

This tower has completely collapsed, although sufficient of the base has been cleared to show the curvature of the tower. While it was impossible to measure this curvature, it was appreciably bigger than that of the Mīl-i Nādirī (Catalogue 11), with which it was associated, and from which it is distant 35km. east. It was apparently 40 gaz high, compared to the 25 gaz of the Mīl-i Nādirī, which would be in accord with the larger base.

The bricks forming the central core were 25cm by 5cm., while those forming the outer shell were 30 by 5cm.

The desert road between the two towers wound considerably, but was apparently based on a stone foundation, hence probably the original caravan route. This would tend to bear out the original description of the route which speaks of a number of stone markers, about 2m. high, which would have been essential given the contours of the road, and the continual need to keep it clear of sand. Although the two great towers were intended to be visible from each other, the winding road necessitated the lower markers to indicate its configurations.

There seems to be no doubt that this is the base of the second signal-tower built by Qāvurt ibn Ghaghri Beg, the Saljūq ruler of Kirmān. It would thus have a date similar to that of the Mīl-i Nādirī, pre-466/1073.

## 43. Mīl-i Kasīmābād.

This minaret was situated just northeast of modern Zābul in Sīstān. I have visited the site, and all that is left is a mound of bricks which would have to be cleared in order to obtain even a ground plan. I did, however, make certain brick measurements, although it was not possible to assign any of them to any particular part of the original fabric. These bricks ranged from 15cm. square by 5cm. thick, 20 by 5, 23 by 5, 30 by 5, to 30 by 6cm. These various dimensions accord with those measured in other minarets of the period.

Fram Tate's description and photographs (1909: 177 - 228), I have been able to make the following description. It was a conico-cylindrical shaft on a square plinth, situated at the southern angle of a large courtyard whose sides were encompassed by rooms. The whole stood 22.50m. high with a base diameter of 5.40m., exactly filling the square base. According to Tate, the spiral staircase was most unusual in that for the first 3m. it spiralled around a central column, above which height it was entirely supported by the exterior walls. I know of no other example of this form, and since the upper section was ruined at the time of his visit, it may be that Tate was mistaken about the structure.

The exterior decoration was of the simplest being basically single stretchers in a plain bond, enlivened with one or two bands of soldiers. There were however two fine inscriptions, the lower, in simple Kūfic, the upper in plaited Kūfic, with both the plaits and the finials regularised. The lower inscription apparently bore the name of "Taj-ud-Dīn Abū'l Fazl-i-Nasr", while the upper bore the name of his grandson, "Tāj-ud-Dīn Harab". Tate therefore assumed that the minaret was begun in the

reign of the elder Tāj-al-Dīn, and finished by his successor, who died in 612/1215. It is therefore to be placed in the second half of the twelfth century.

As far as I was able to ascertain from questioning the local people, the minaret apparently fell in 1955-6.

44. Tabas, Masjid-i Jāmi'.

This minaret, known as the Manār-i Kabīr, was apparently destroyed in this century. A close examination of the site failed to produce a single brick which could with certainty be identified with this minaret, and presumably the materials have now been incorporated into the walls of several of the modern houses of Tabas.

Hedin (1910: 38, fig. 154) does however, reproduce a photograph of it from which it is possible to make some form of description. As far as can be judged from the photograph it must have been approximately 30m. high, and consisted of a simple conico-cylindrical shaft, with no apparent base. The entire height of the shaft was decorated with pattern bands, and certainly resembled many of the other great Khurāsānian minarets, particularly that of Khusrawgird (Catalogue 22). The largest lower section consisted of double stretchers with wide rising joints, above which were a series of zones of lozenge diapers formed by wide rising joints, and also a herring-bone pattern of stretchers and soldiers in diagonal bands. There were at least two inscription bands, and the upper section was ornamented with two or three open fret designs.

I was unable to ascertain when the minaret was destroyed, but it must have been comparatively recently.

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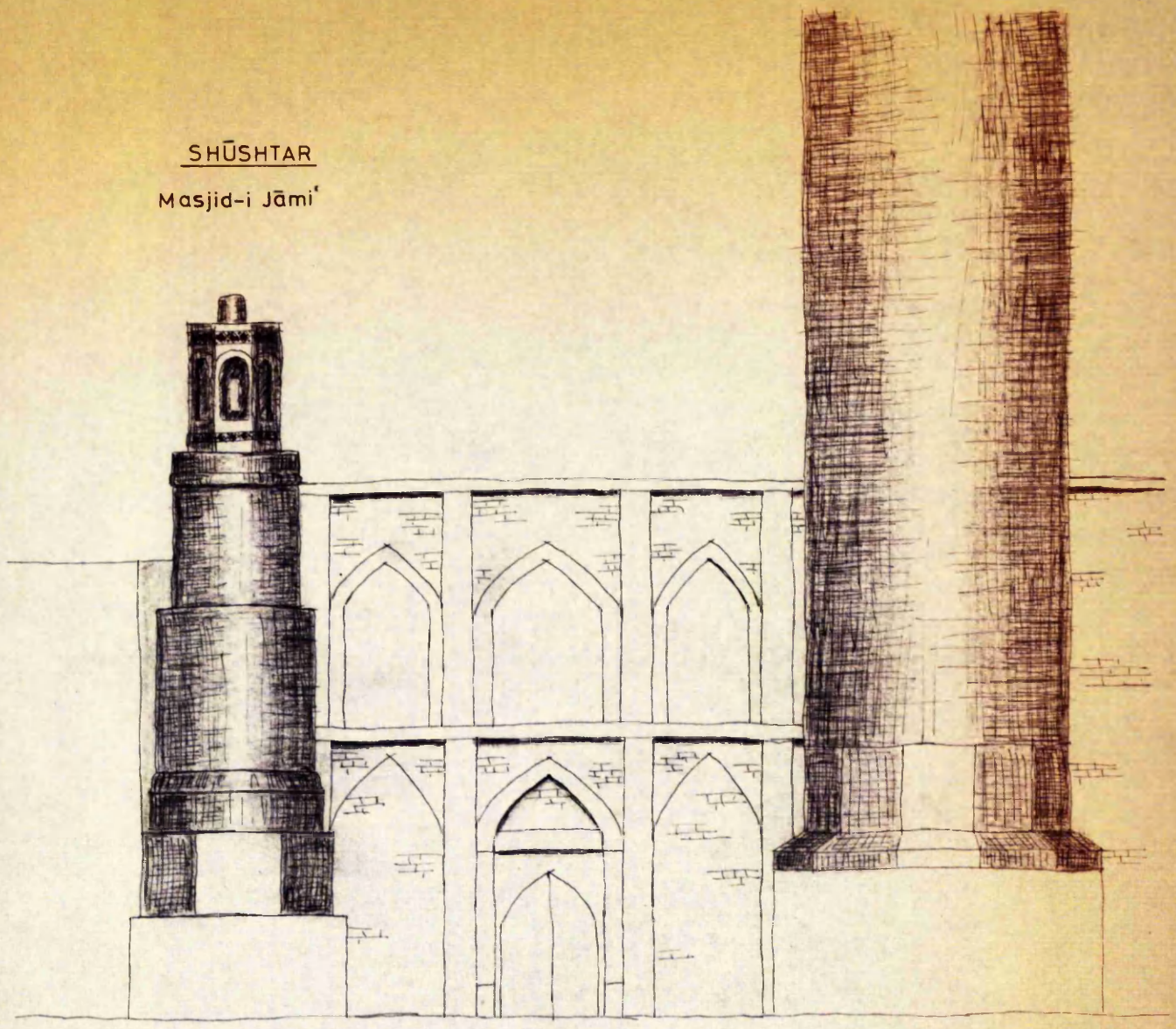
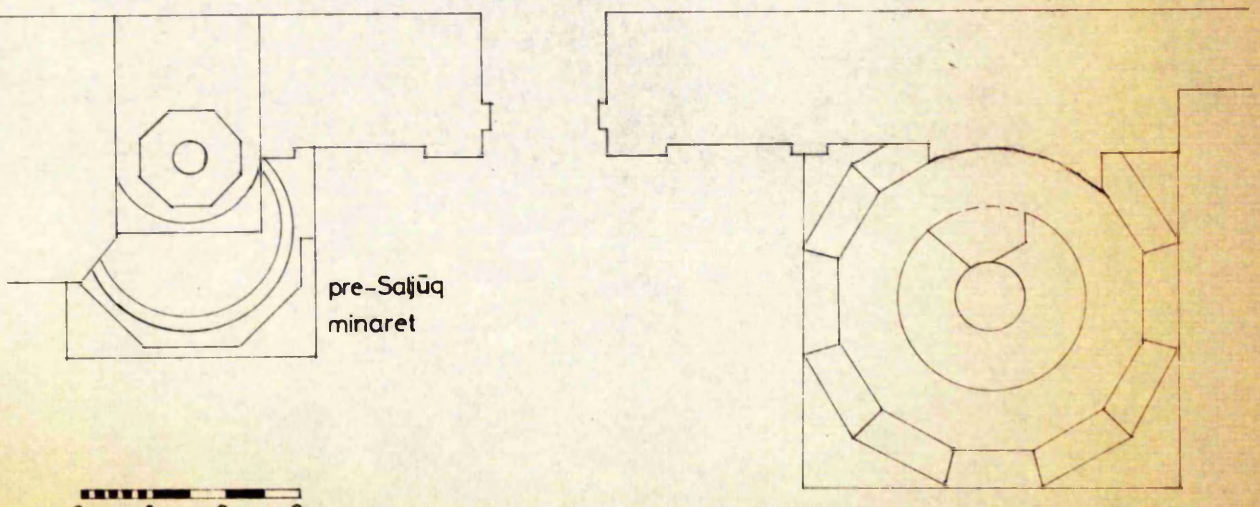
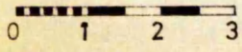
SHŪSHTAR

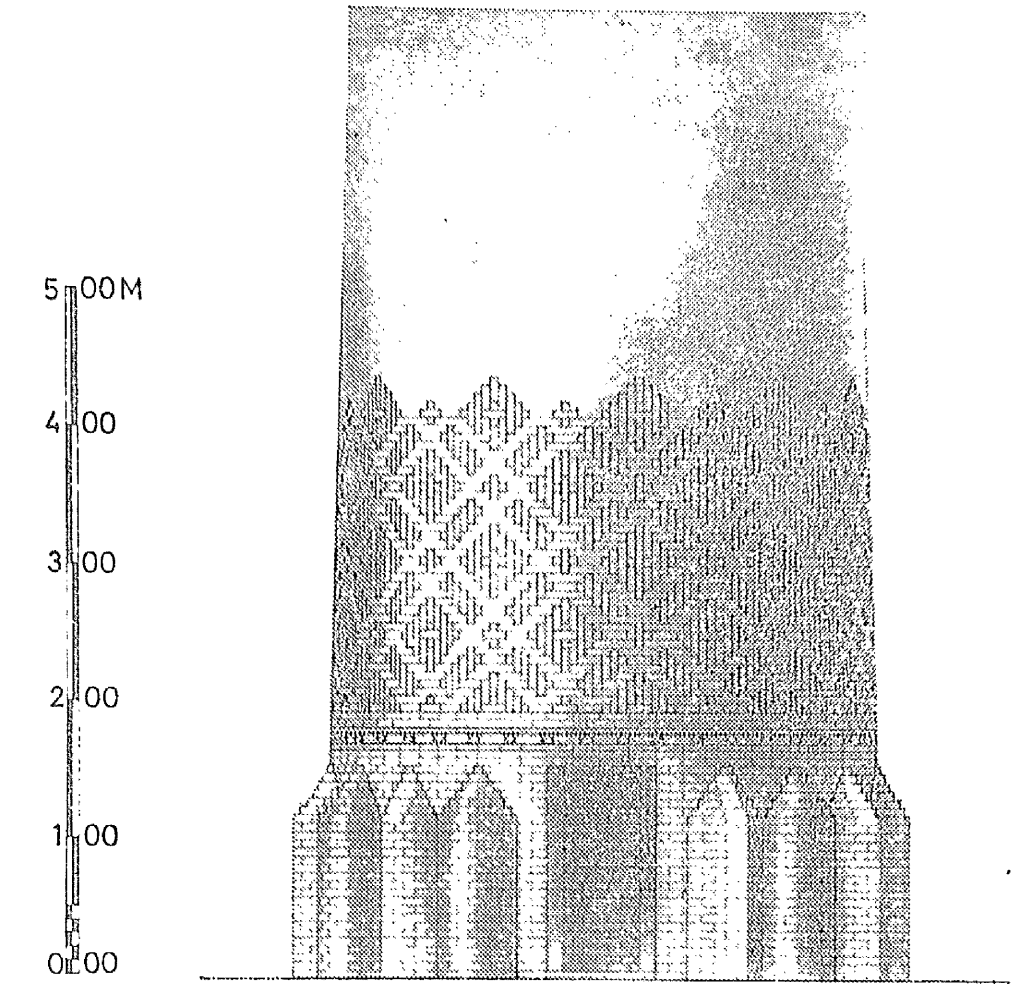
Masjid-i Jāmi'

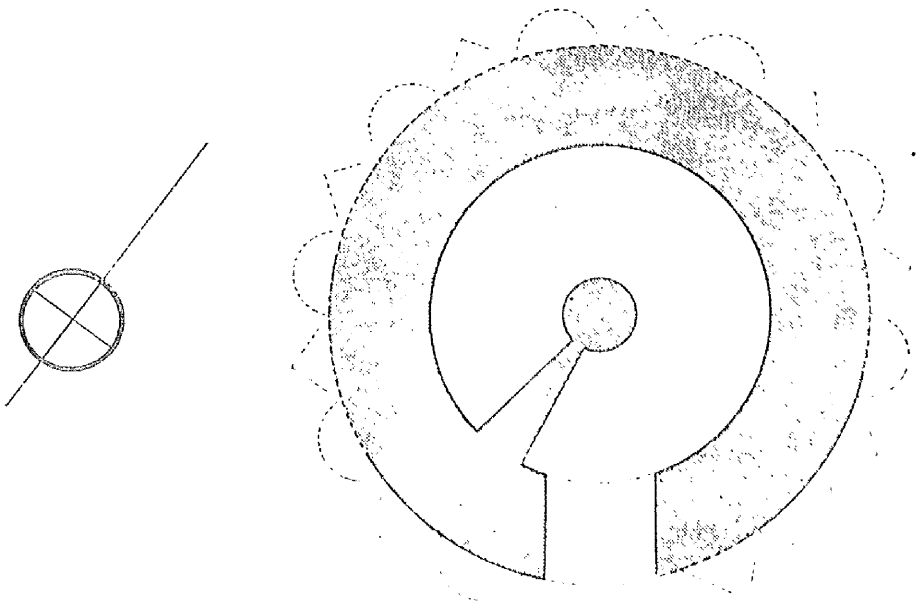




Zarand - Masjid-i Jāmi'



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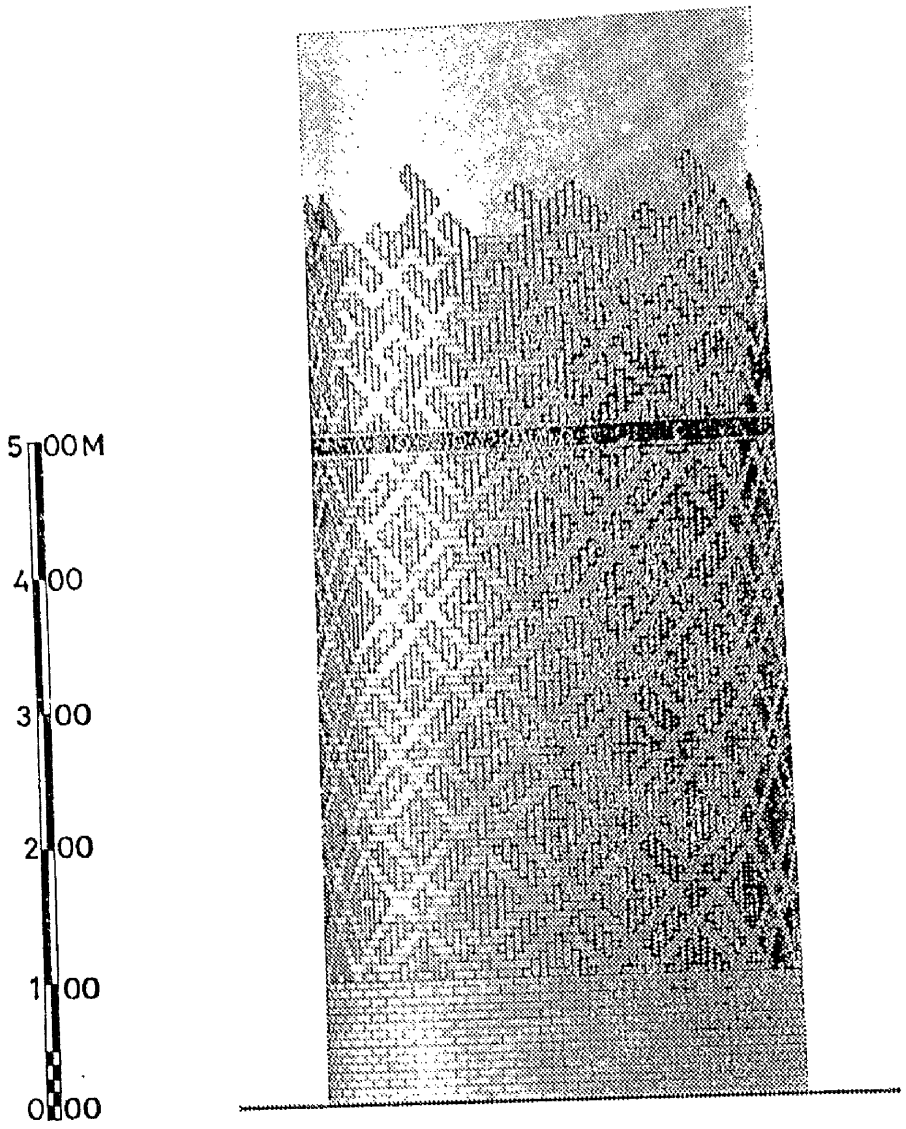
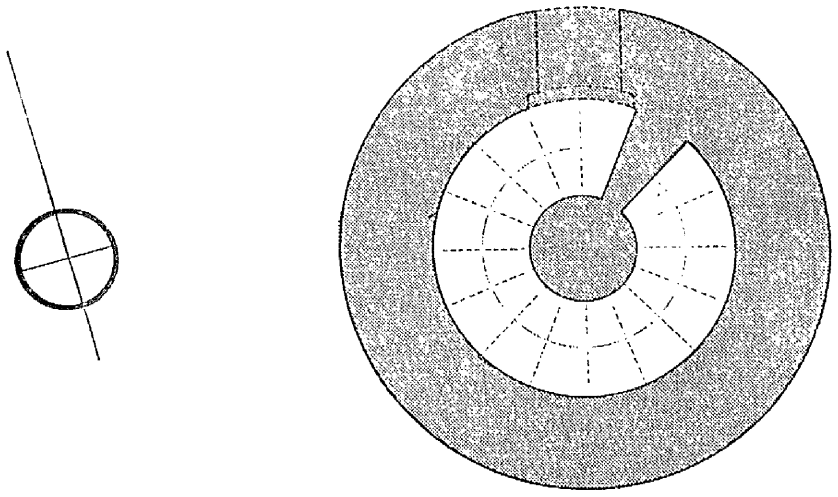
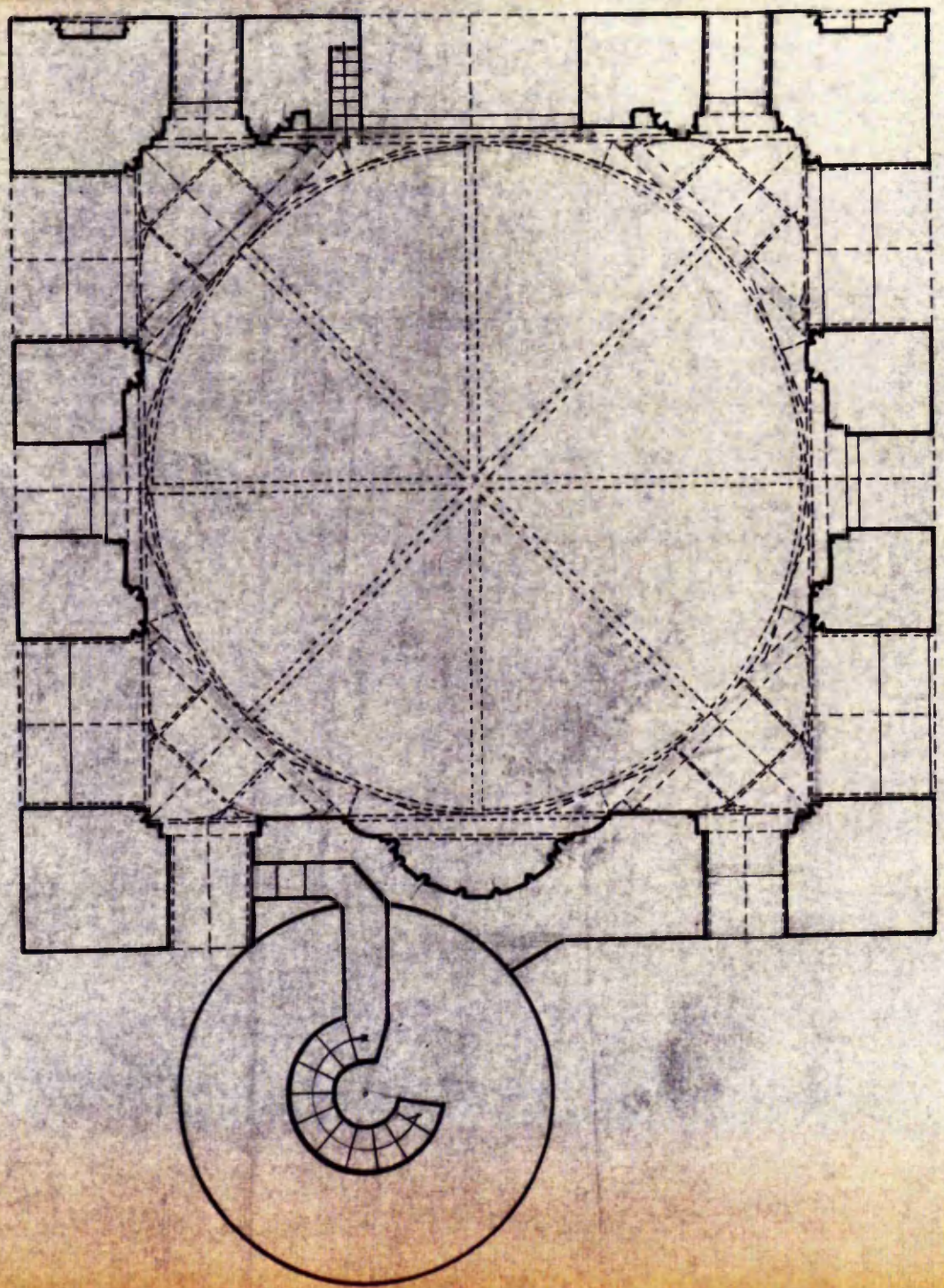


Kirmān - Masjid-i Malik



# MASJID-I-JĀMI'

BARSIĀN 1969

A. LABROUSSE ARCH

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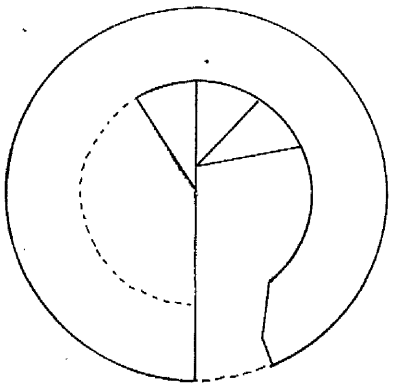

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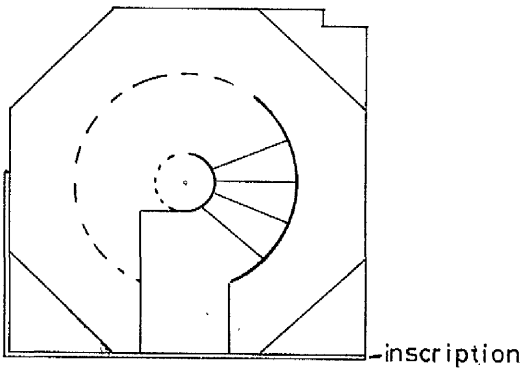


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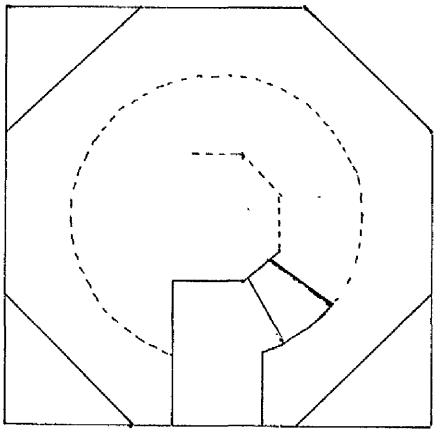

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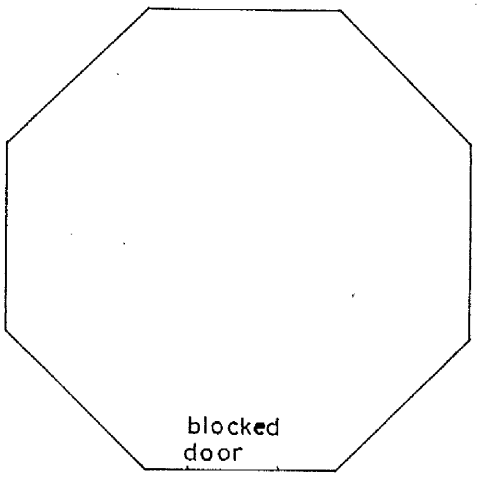


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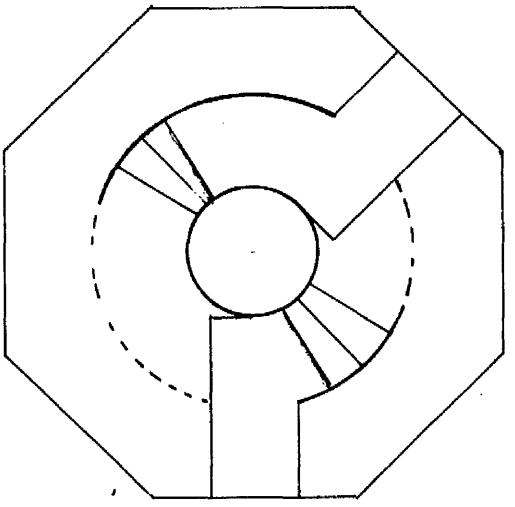
Masjid-i Sha'īā



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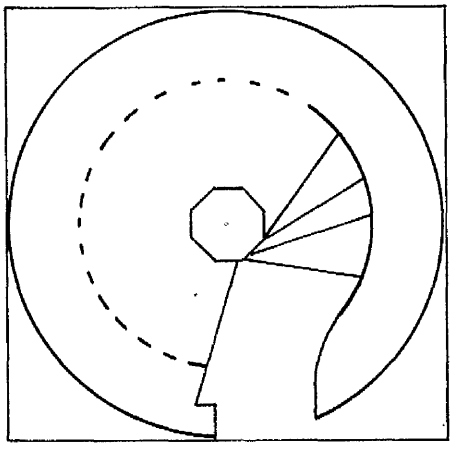

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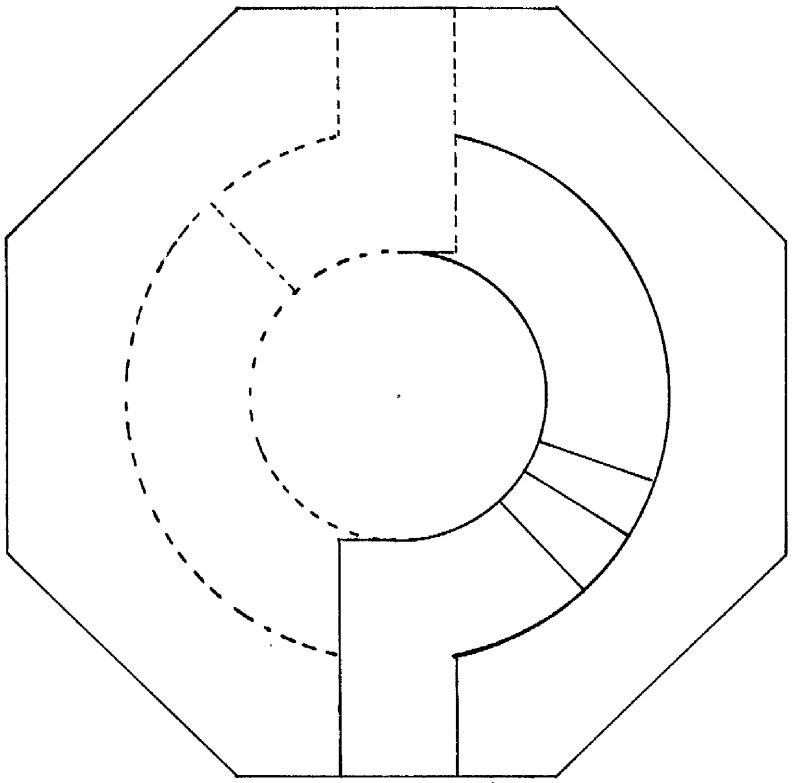

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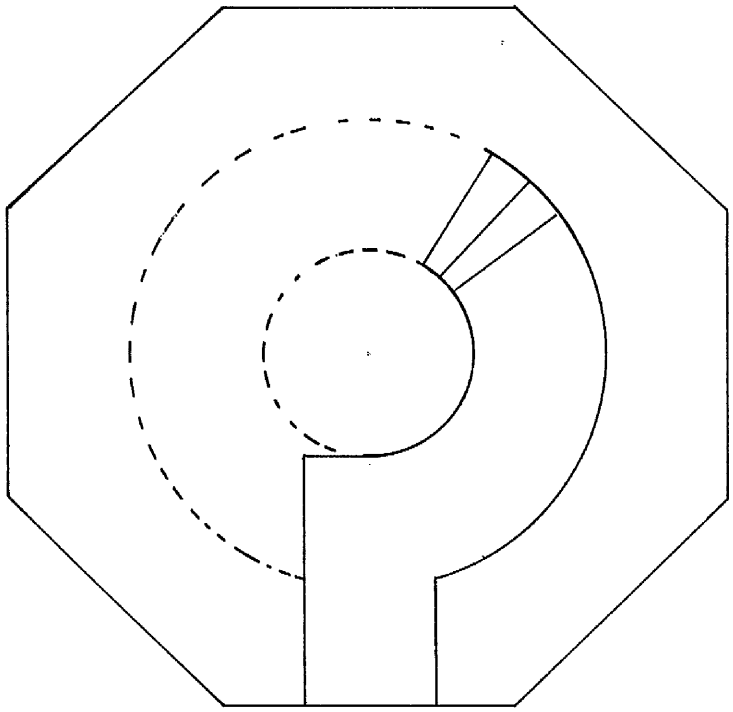

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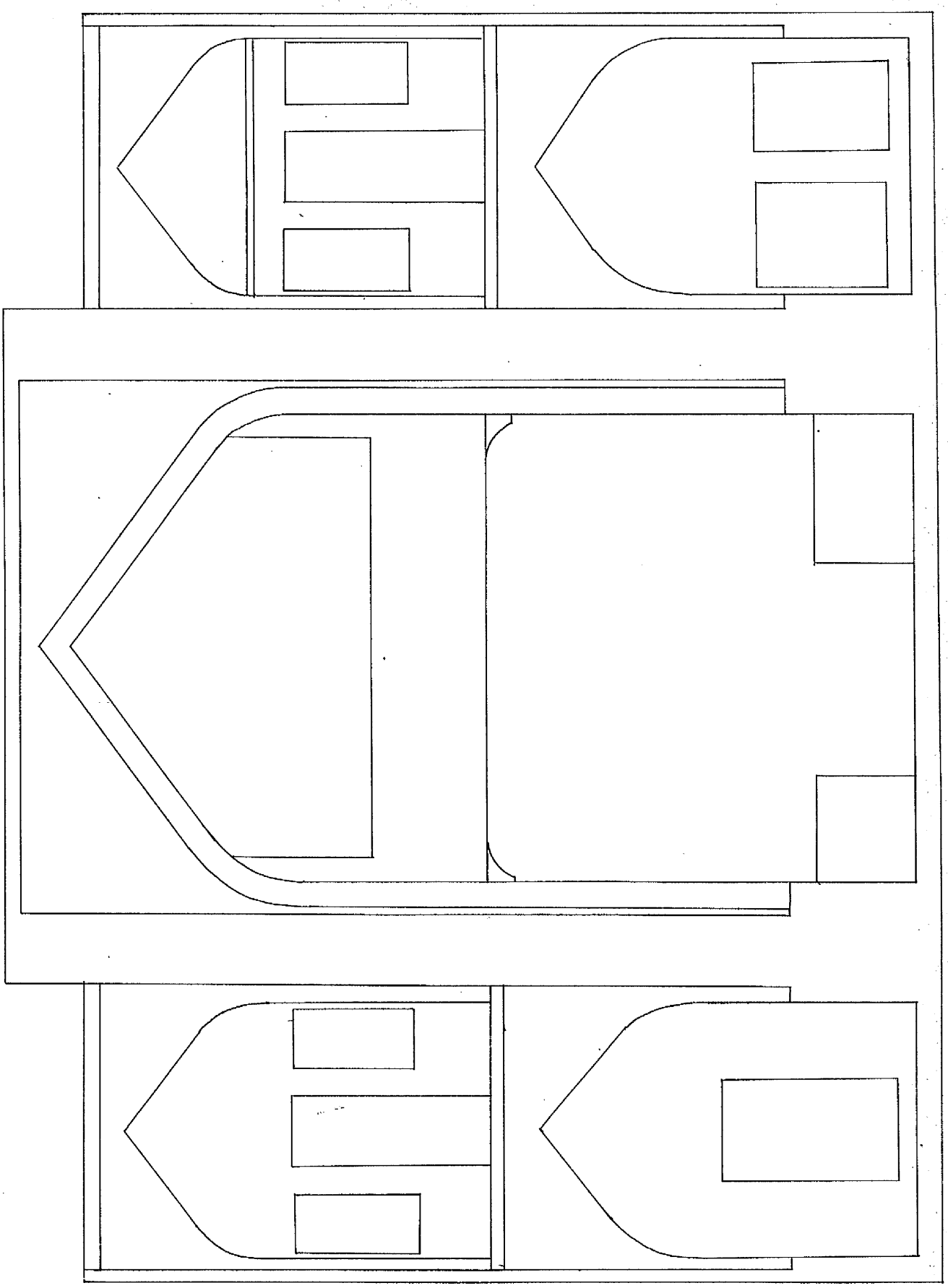

ṬABAS - Madrasa Daw Manār

Elevation of north face of courtyard

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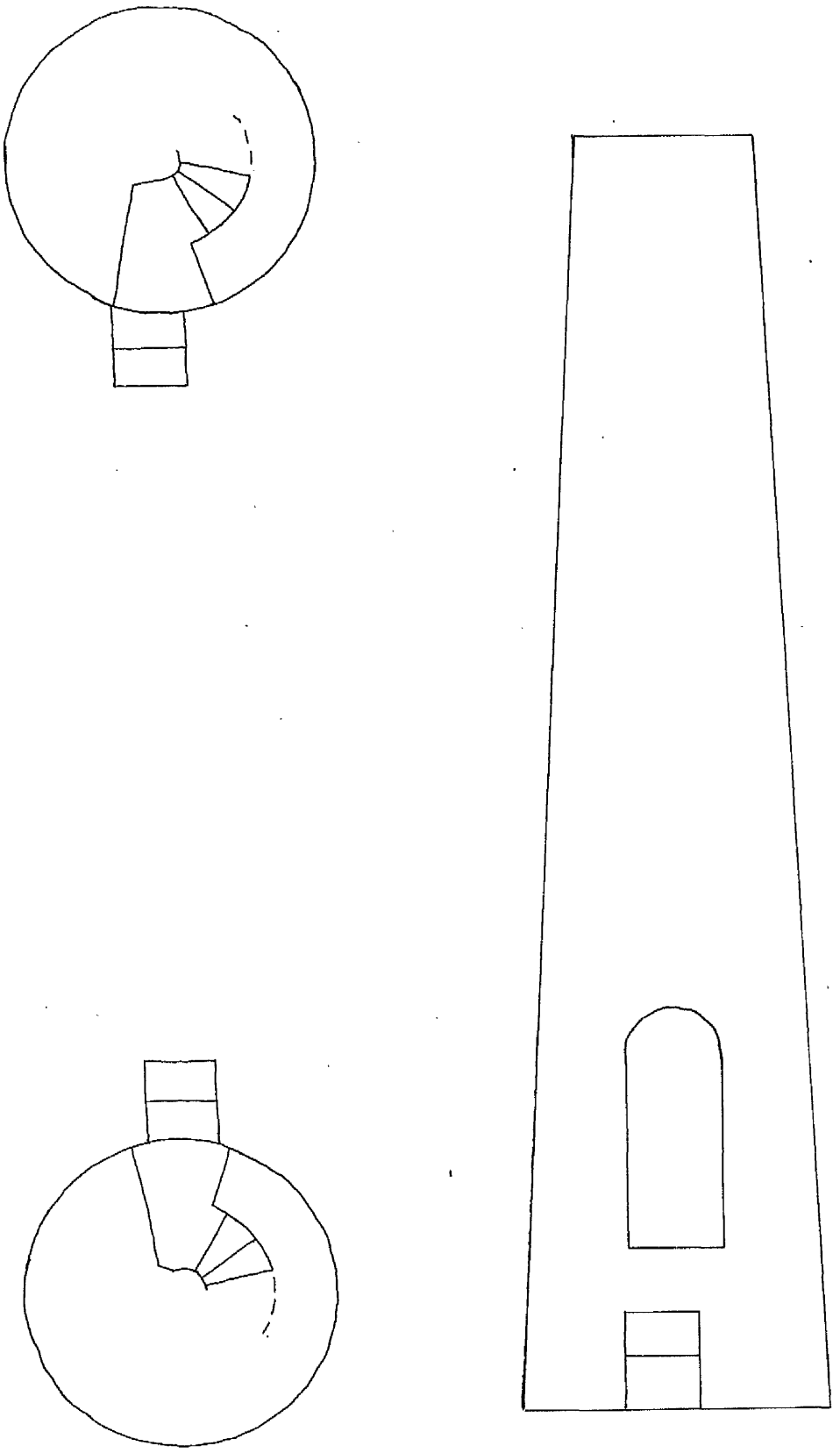

ṬABAS - Madrasa DawManār

Minarets, plans and elevation

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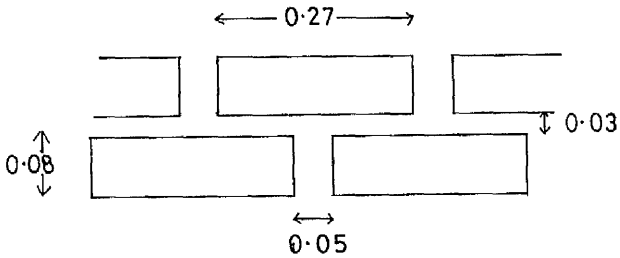
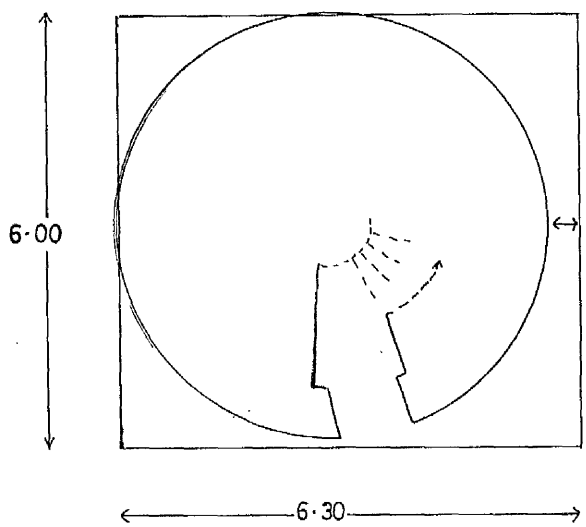
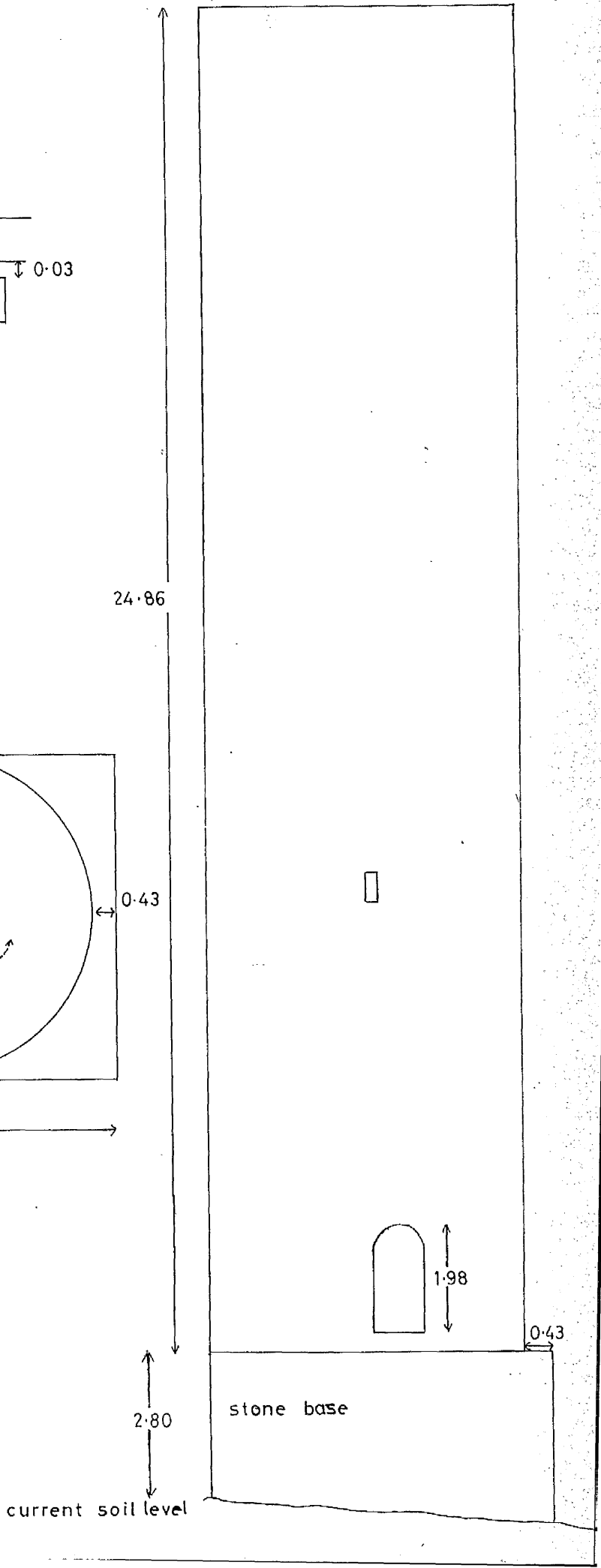



Brick detail




Plan at door level




Khurramābād

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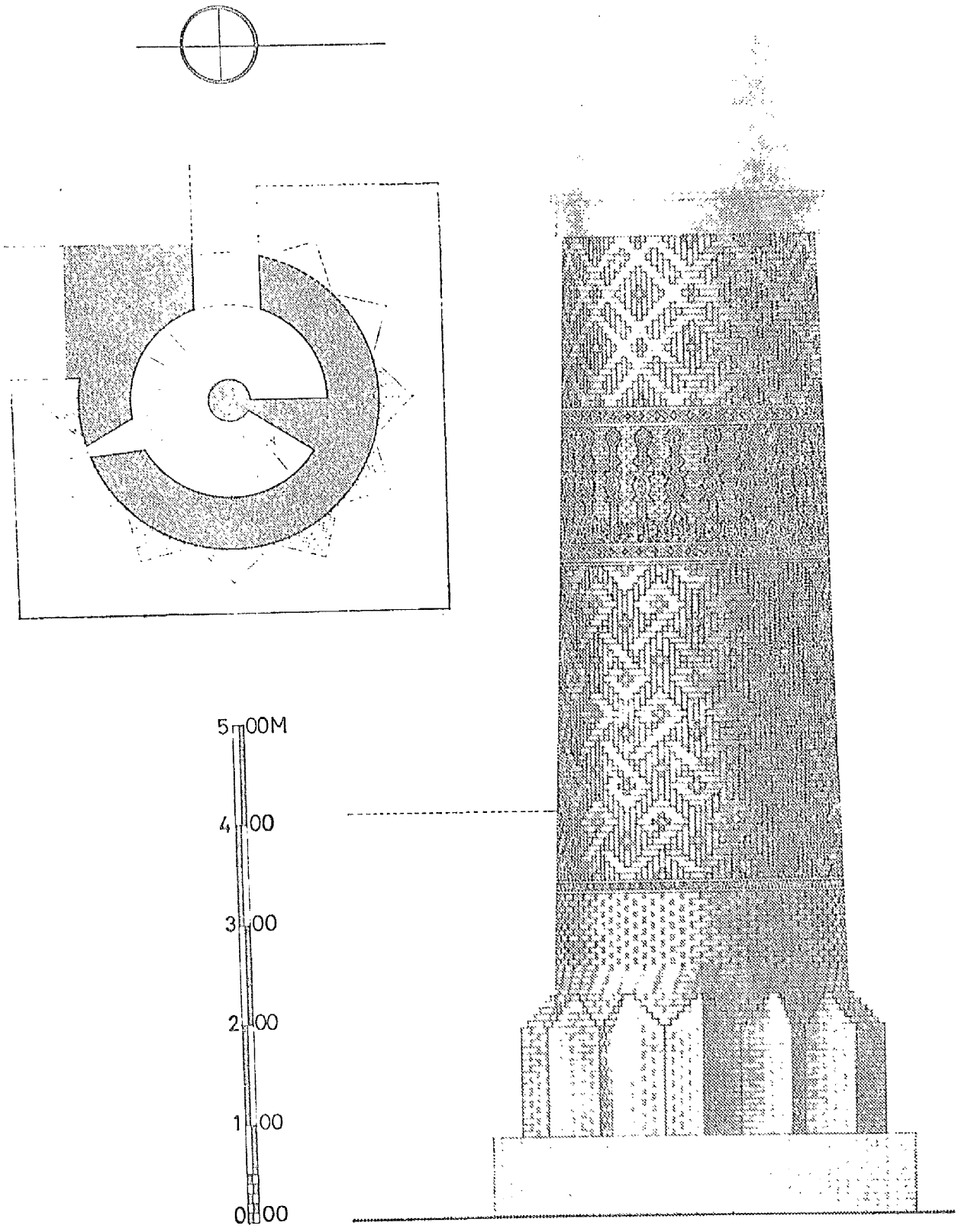
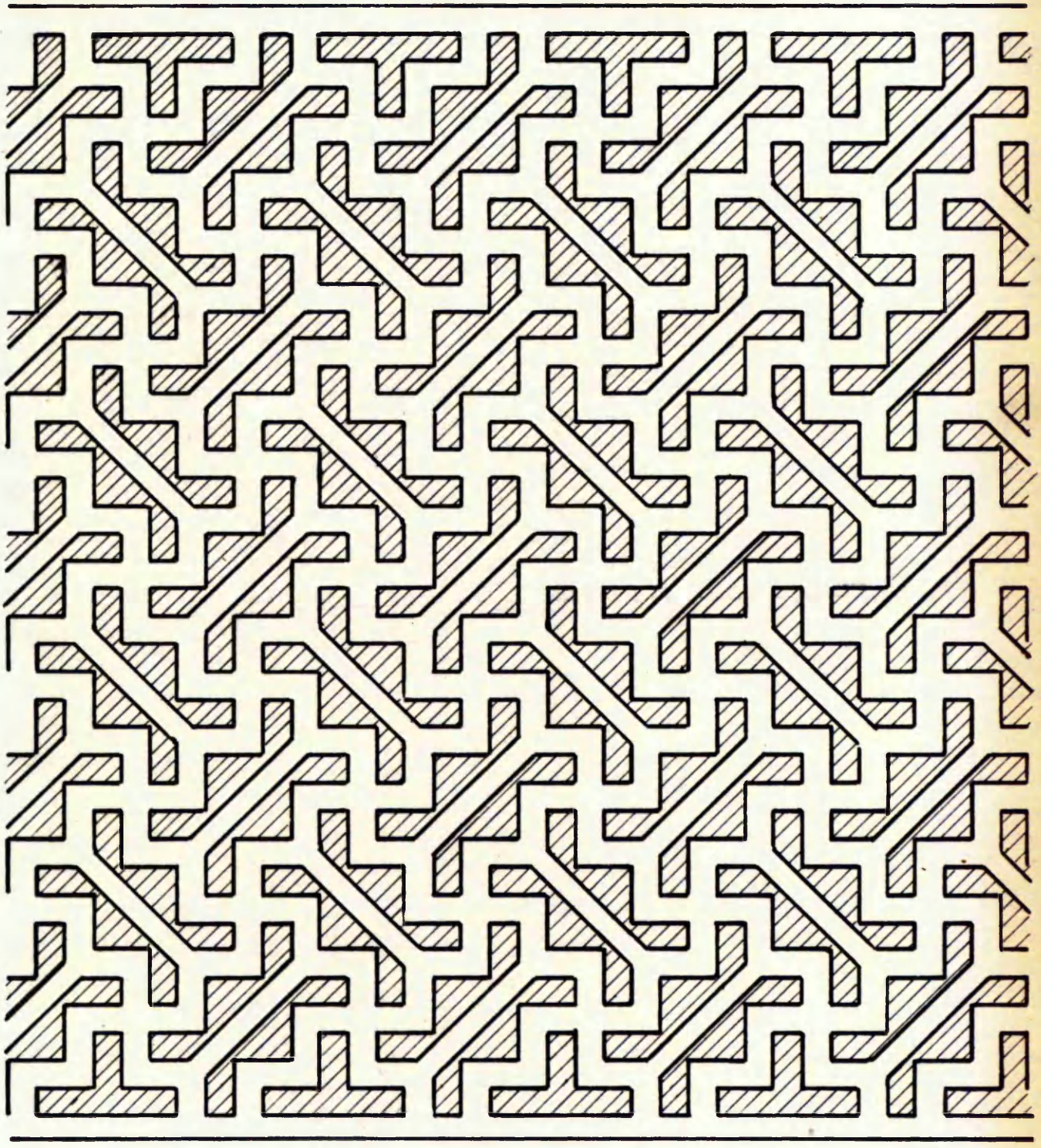



Nigār



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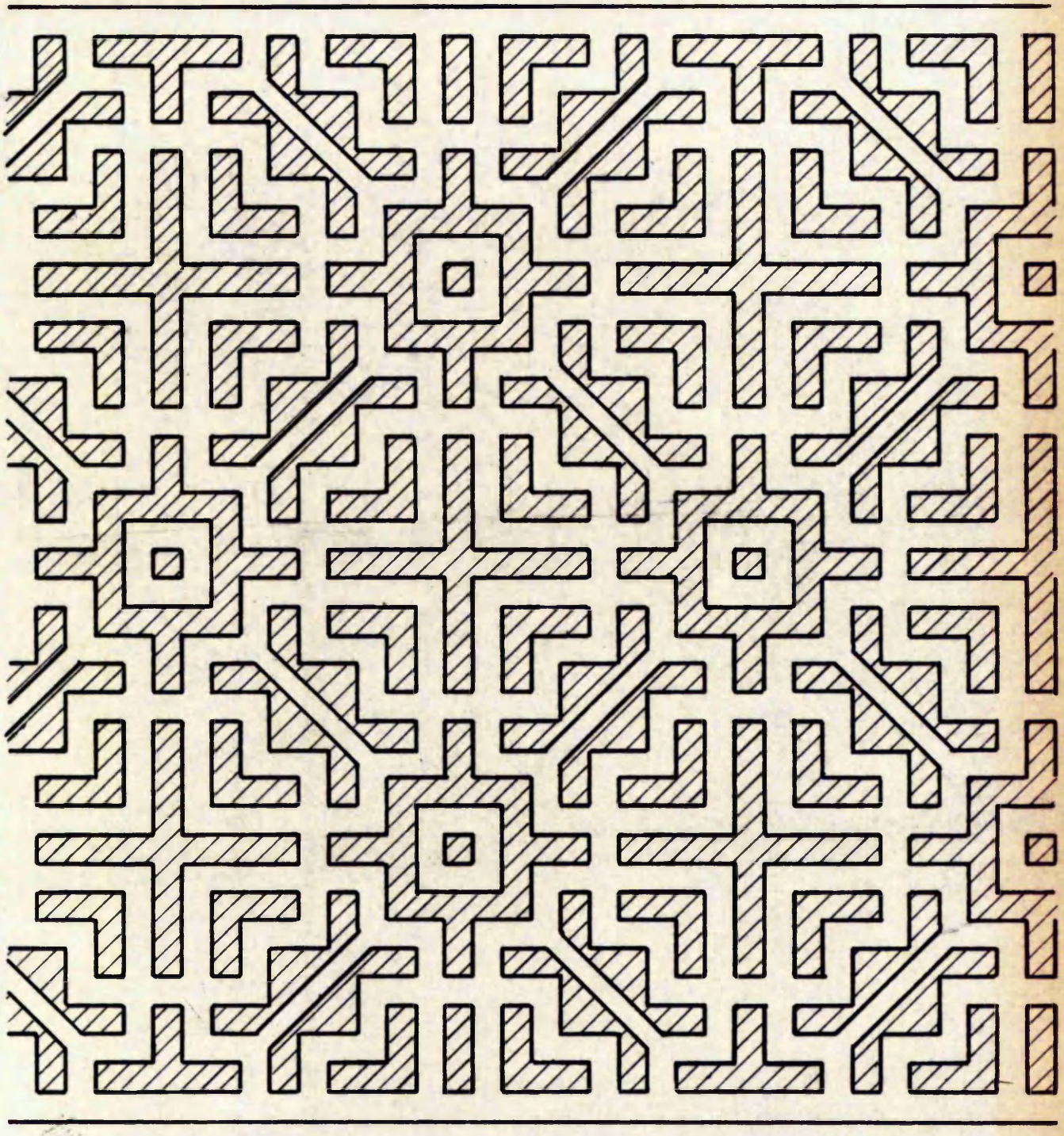
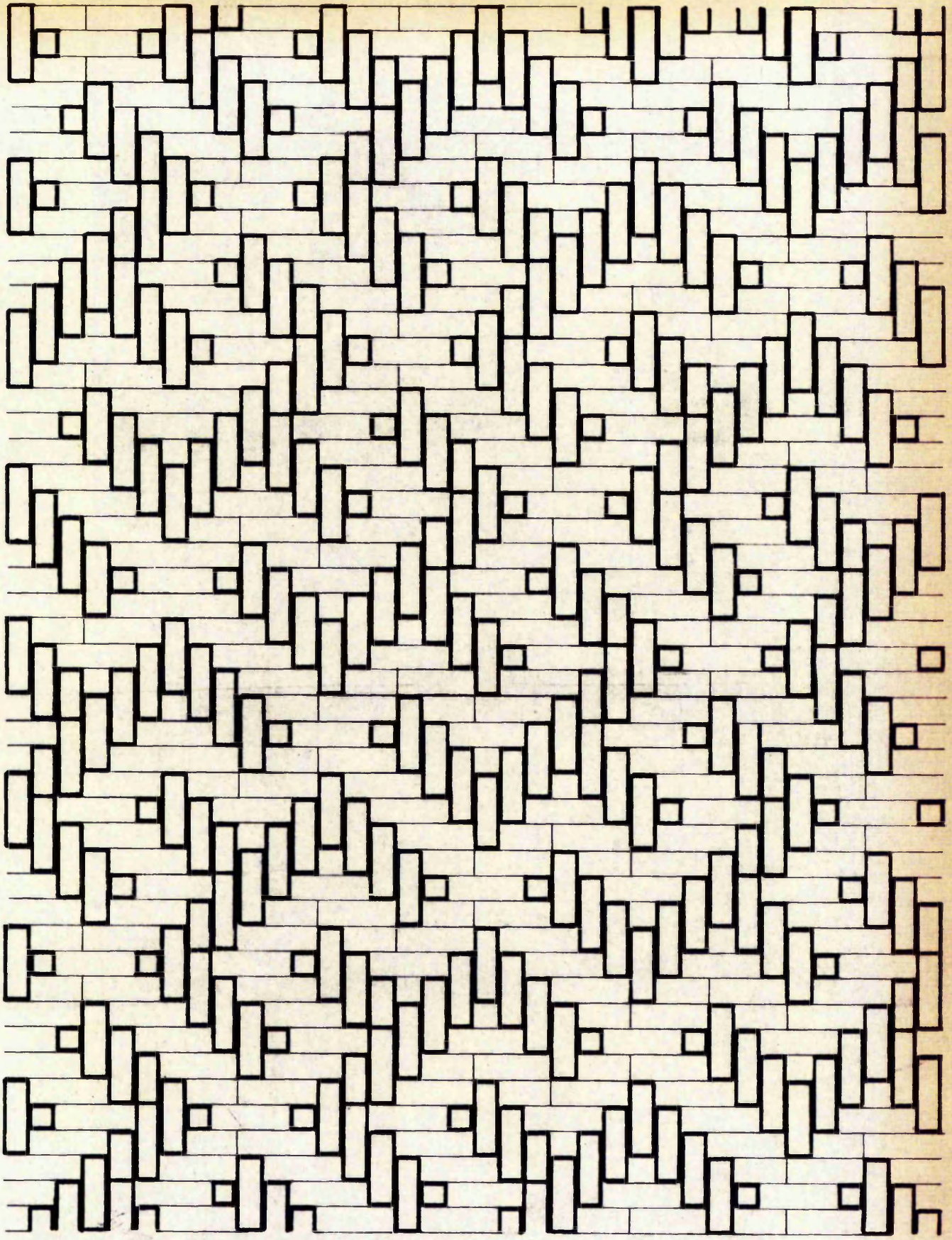


SIMNĀN

Kirmān - Masjid-i Malik



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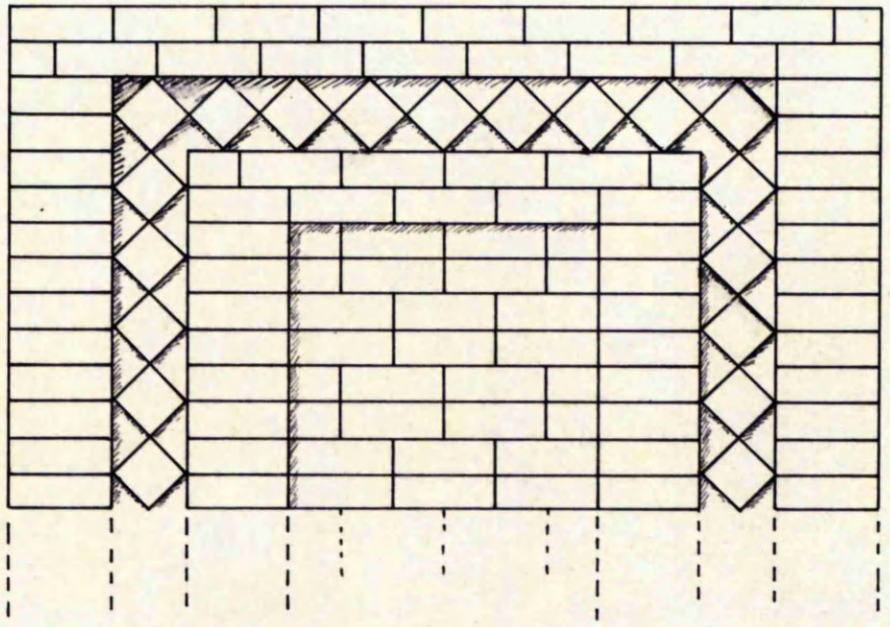
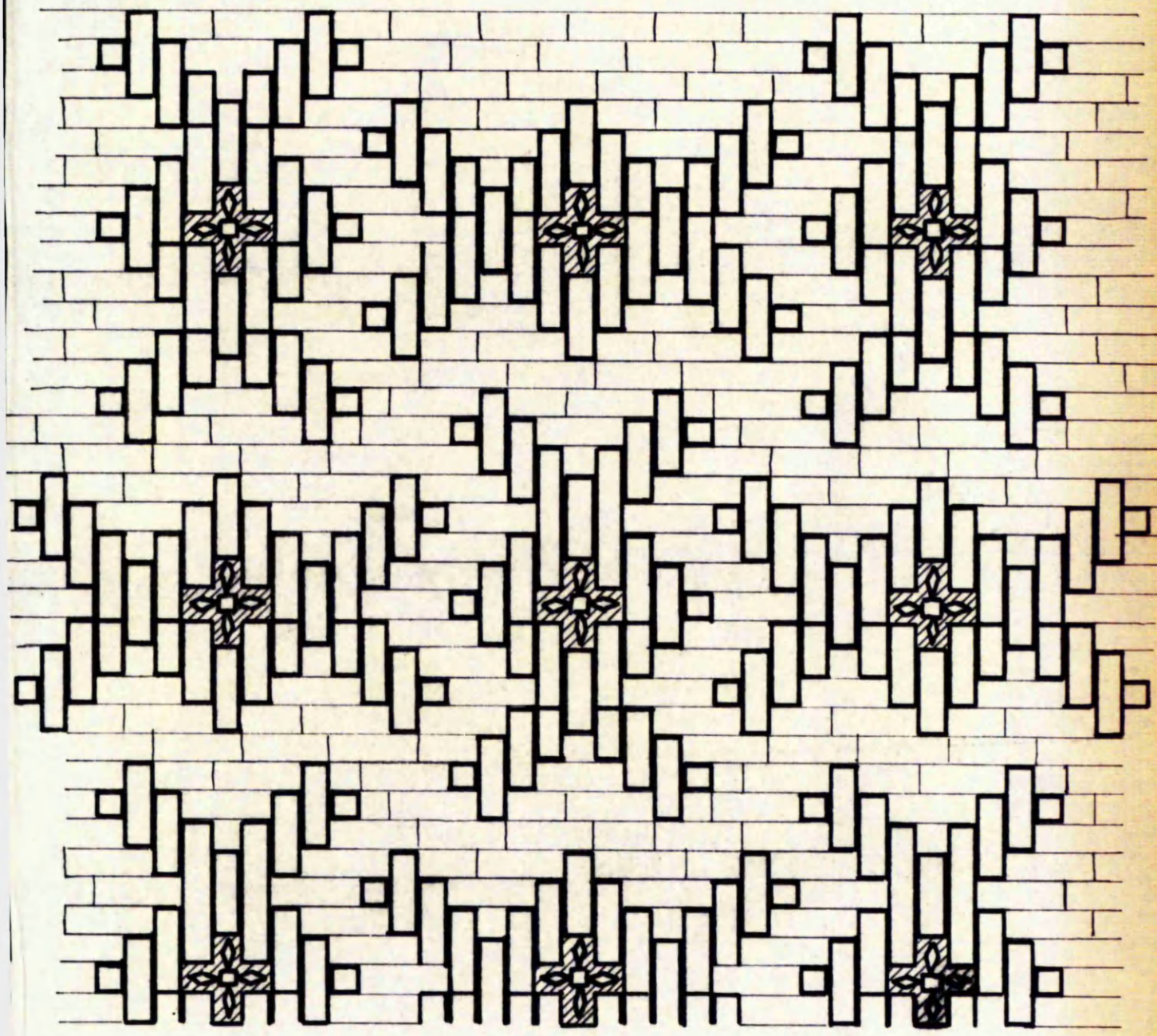
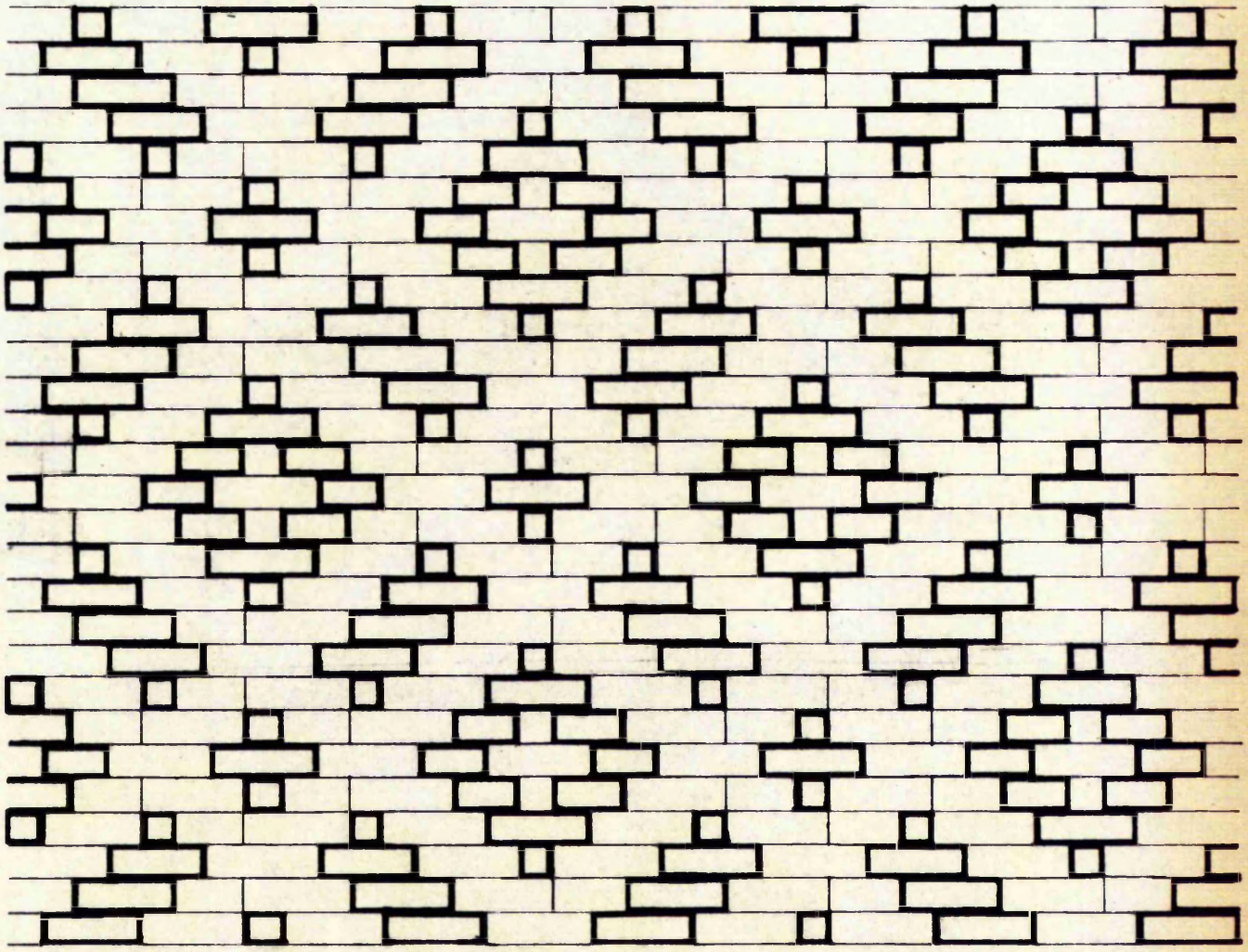


Varzāna - Masjid-i Jāmi'

Minaret base, pattern reconstruction



KHUSRAWGIRD



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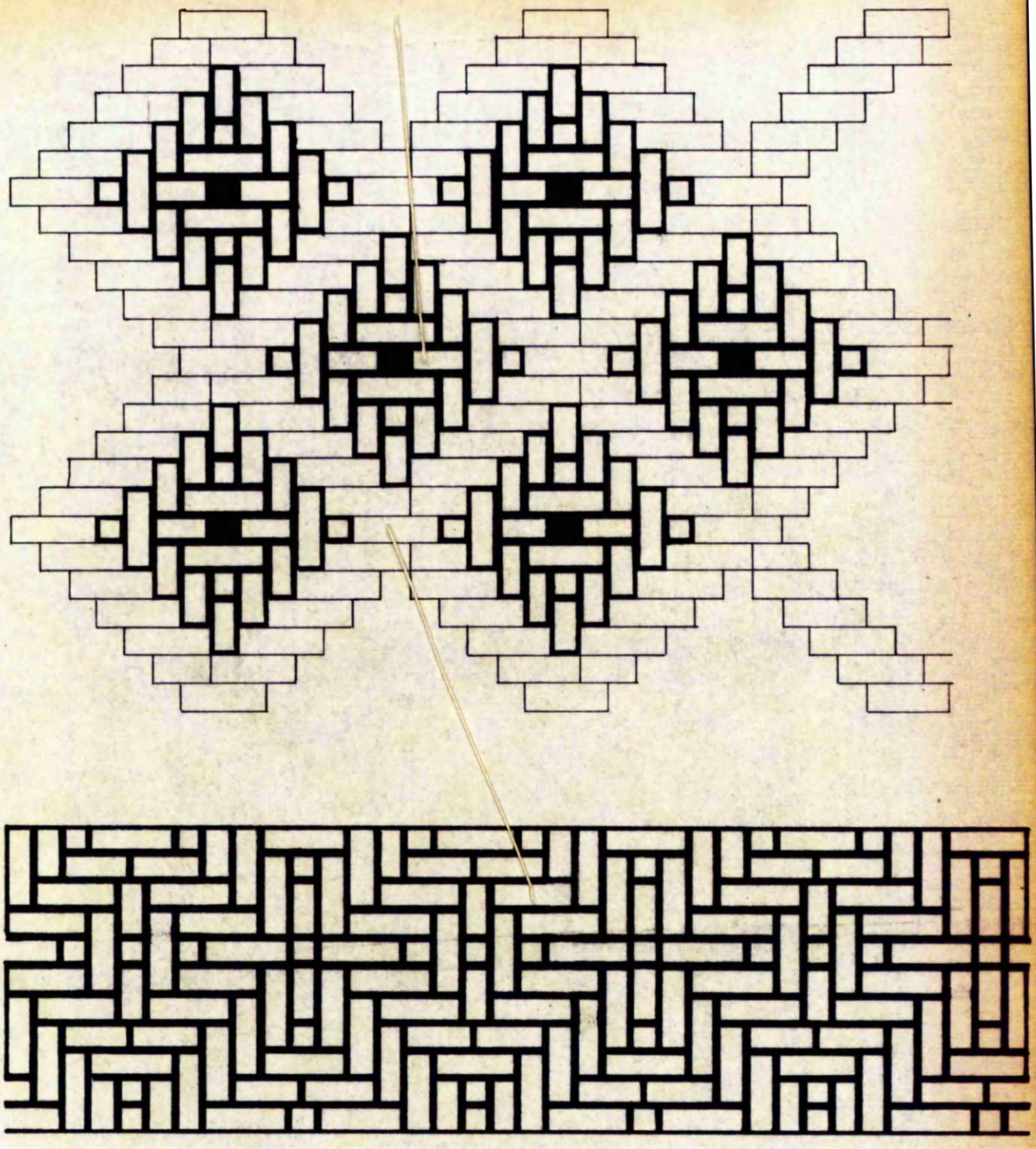

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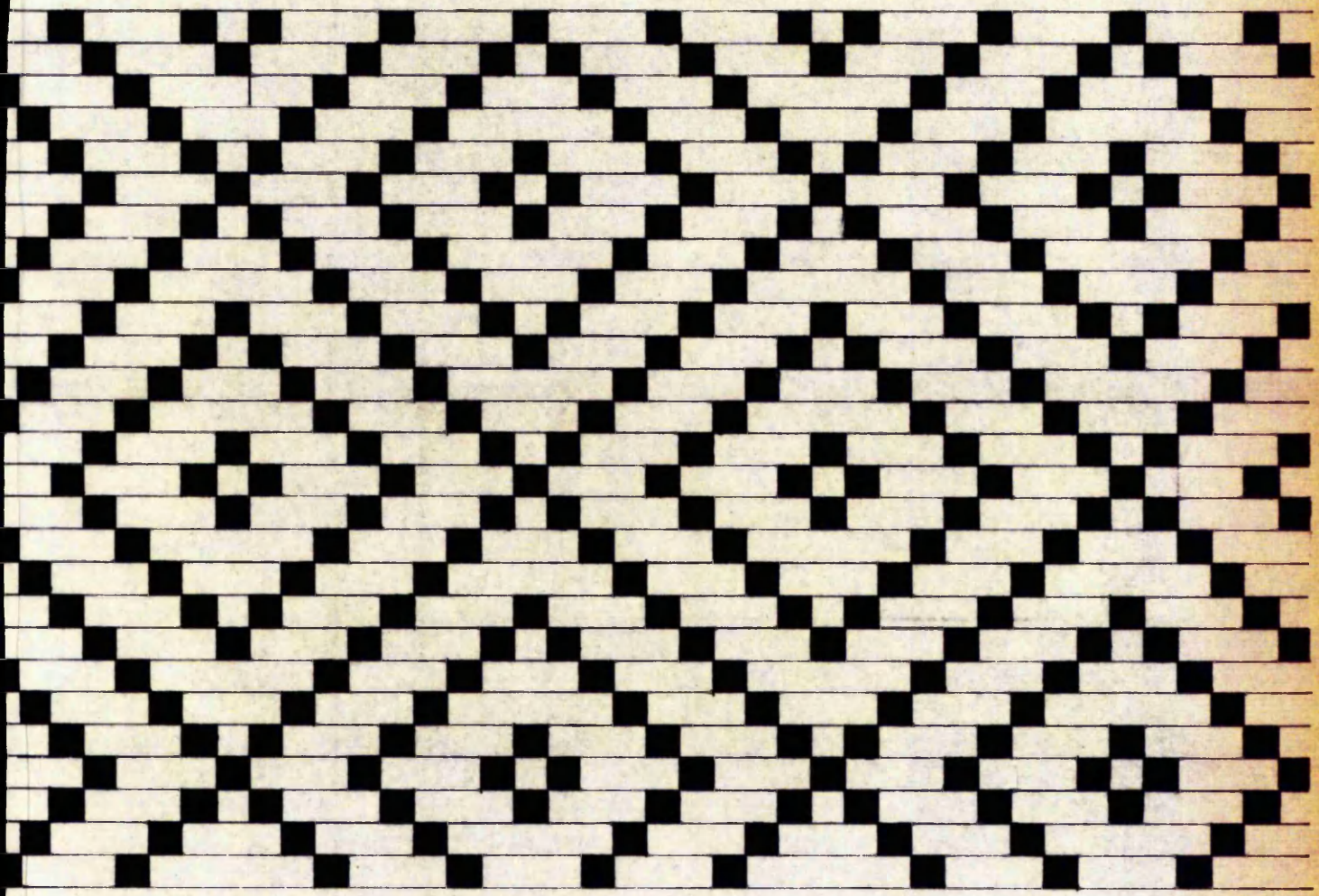

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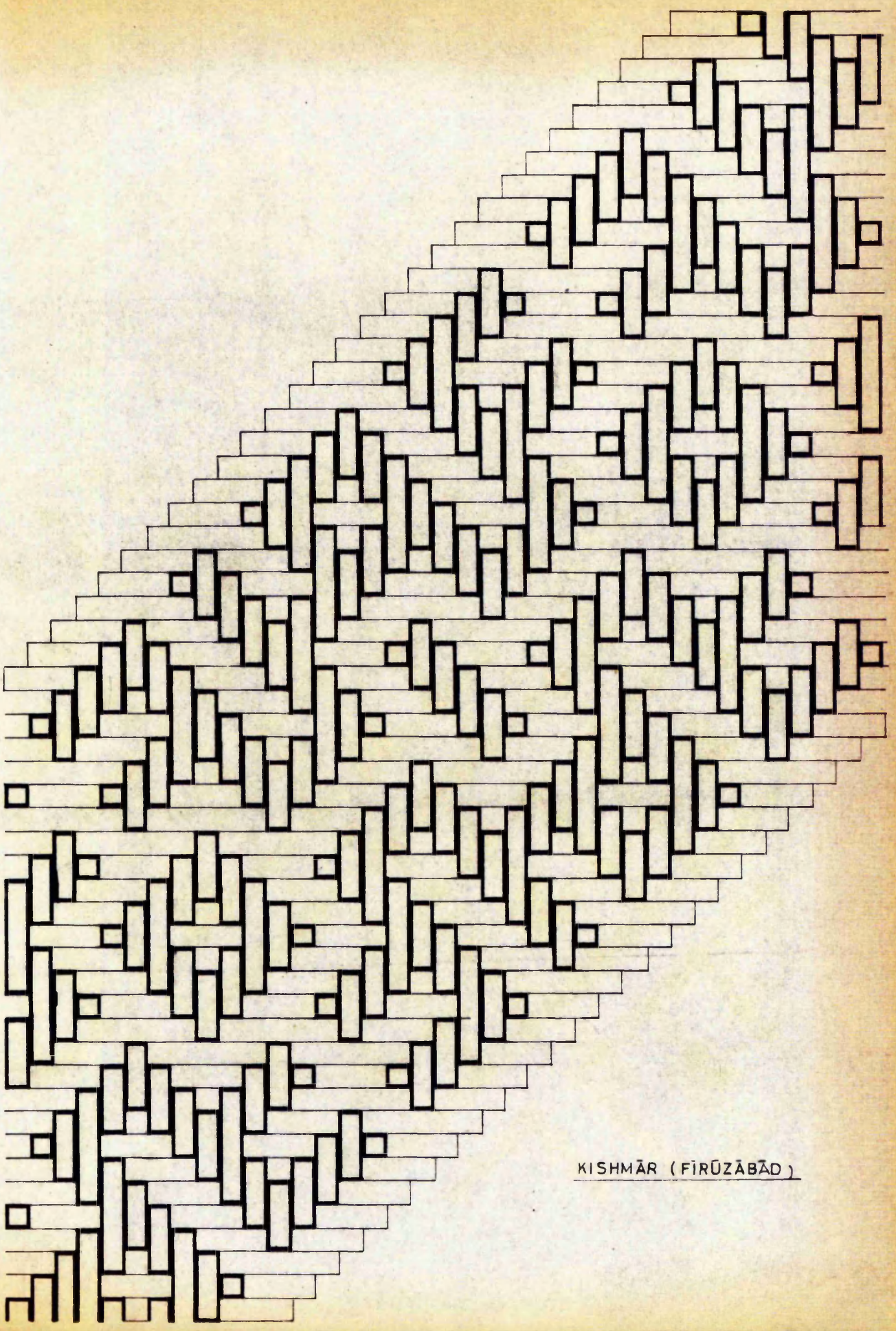

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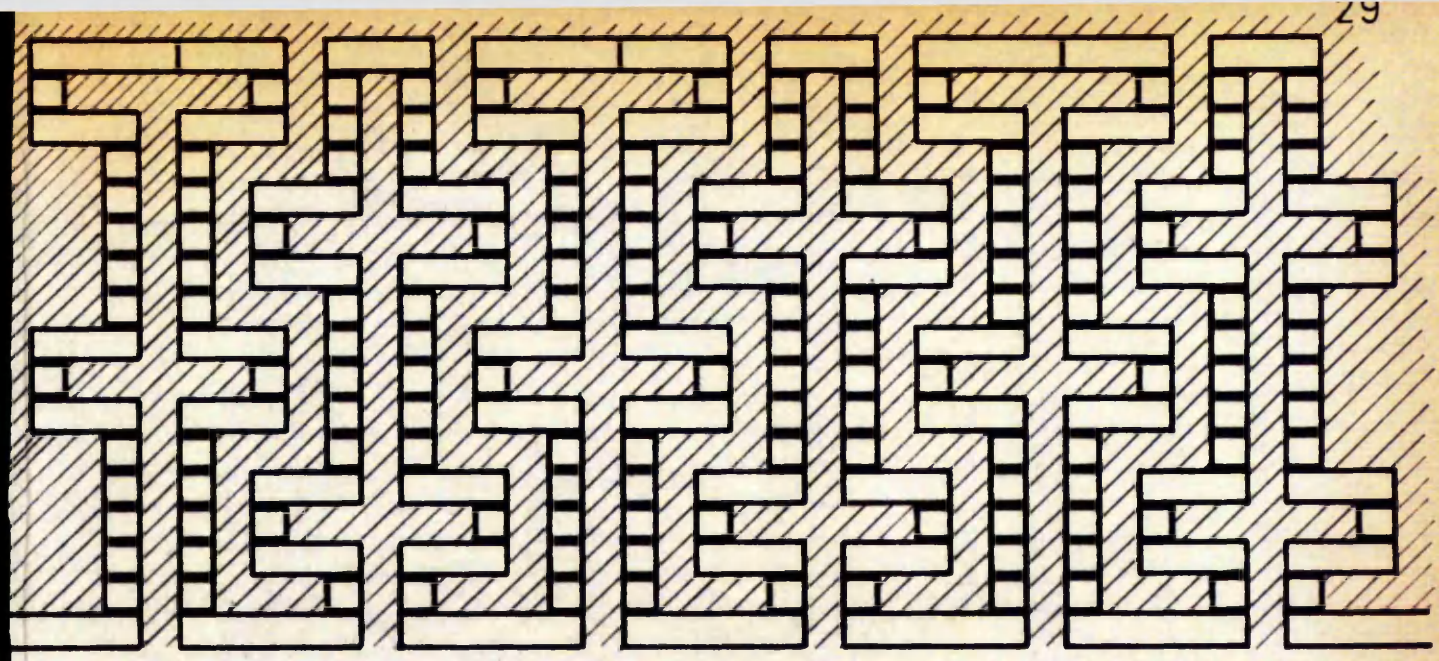

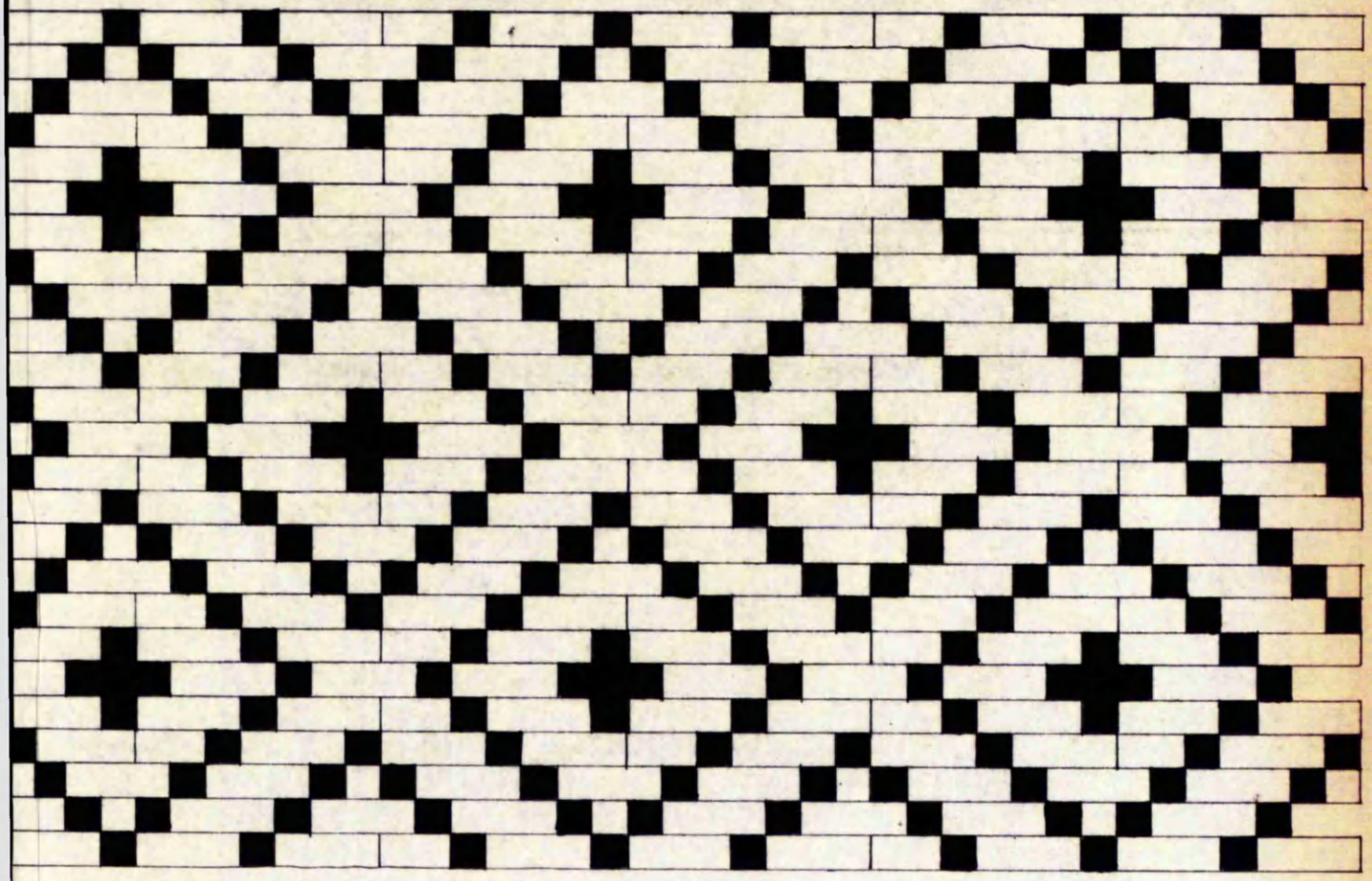

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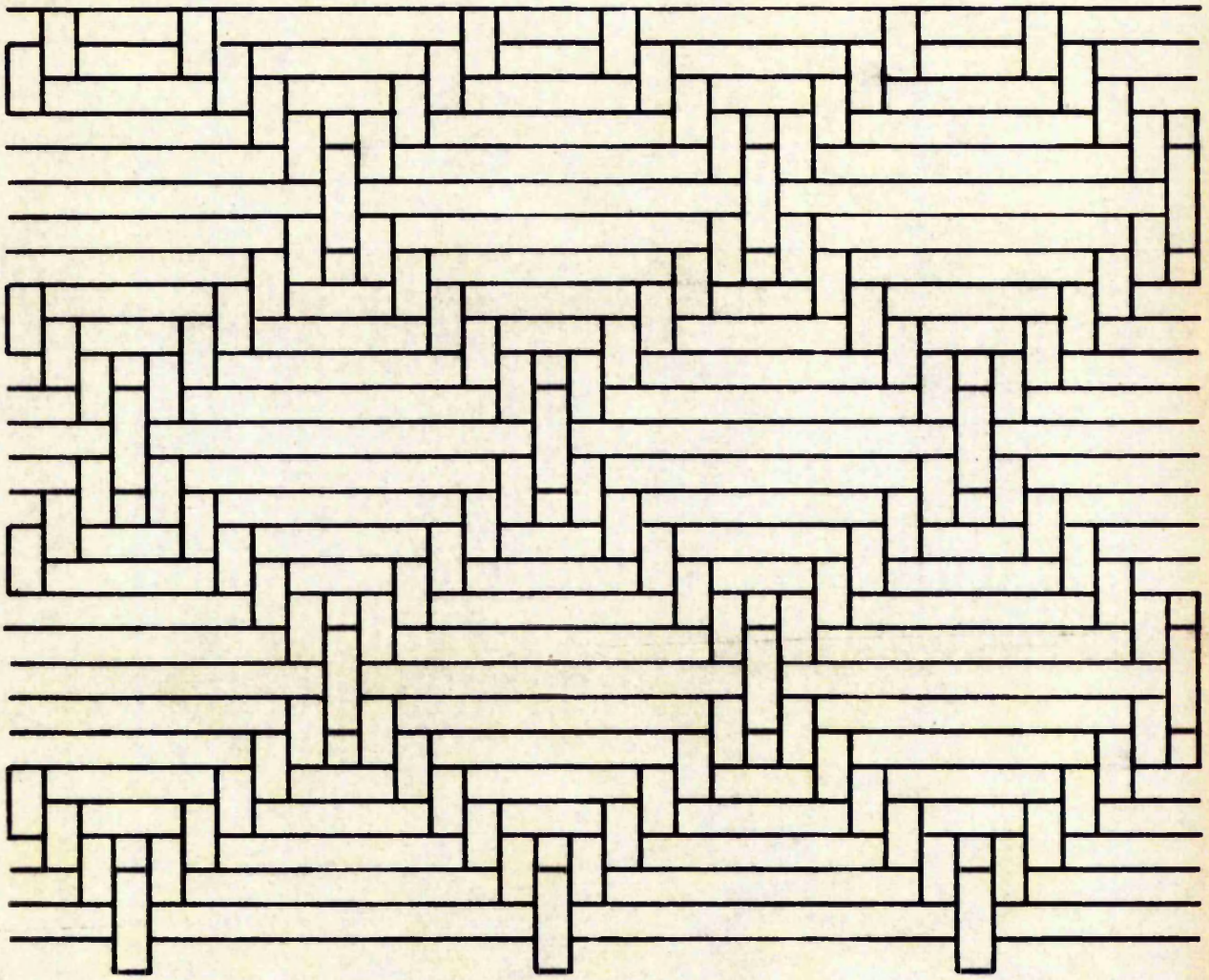

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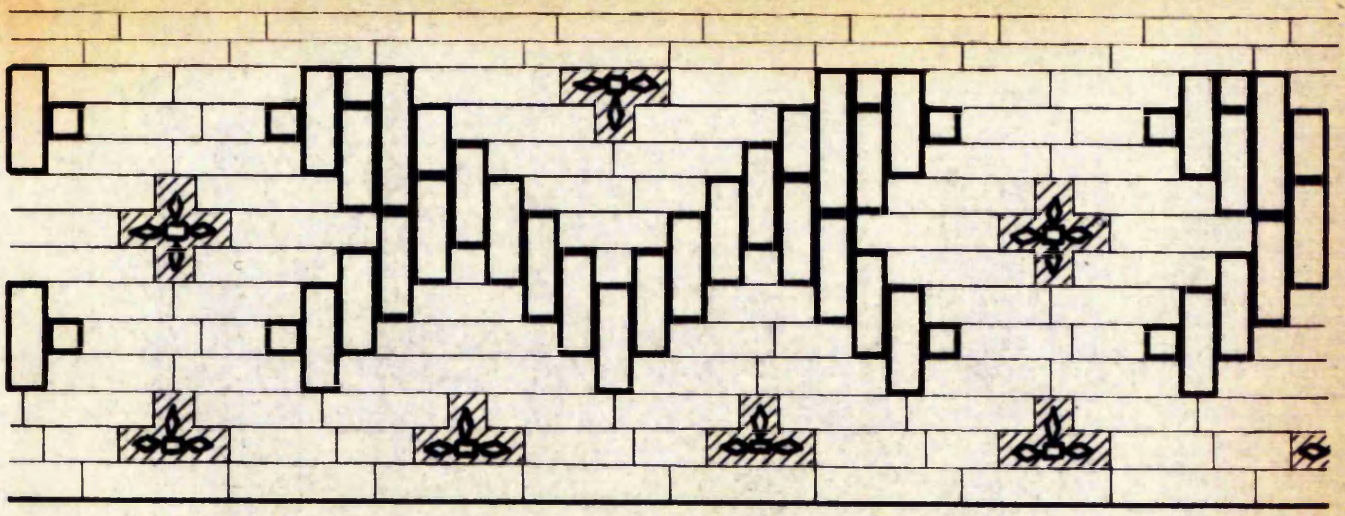

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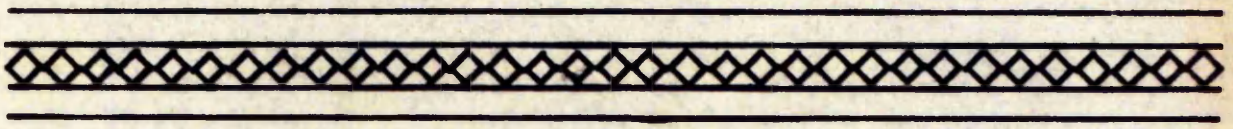

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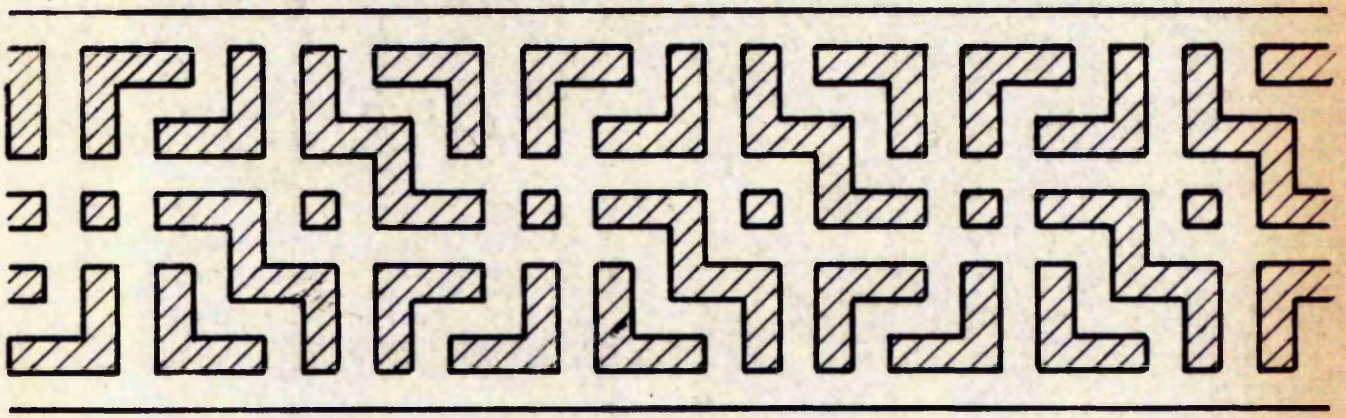

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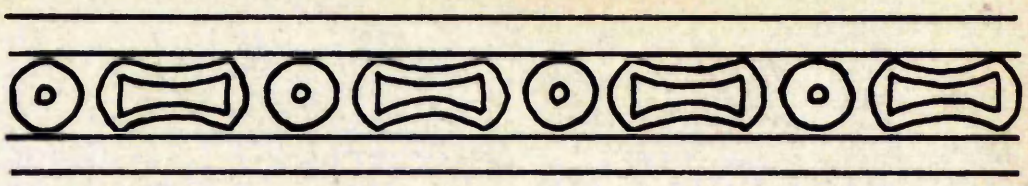

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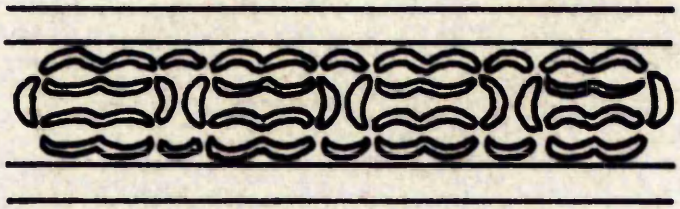

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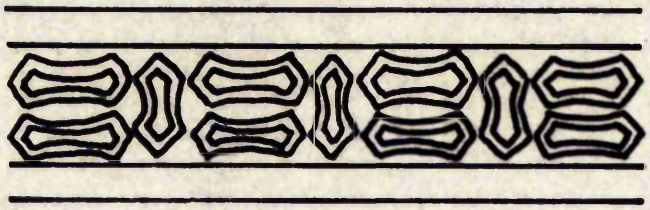

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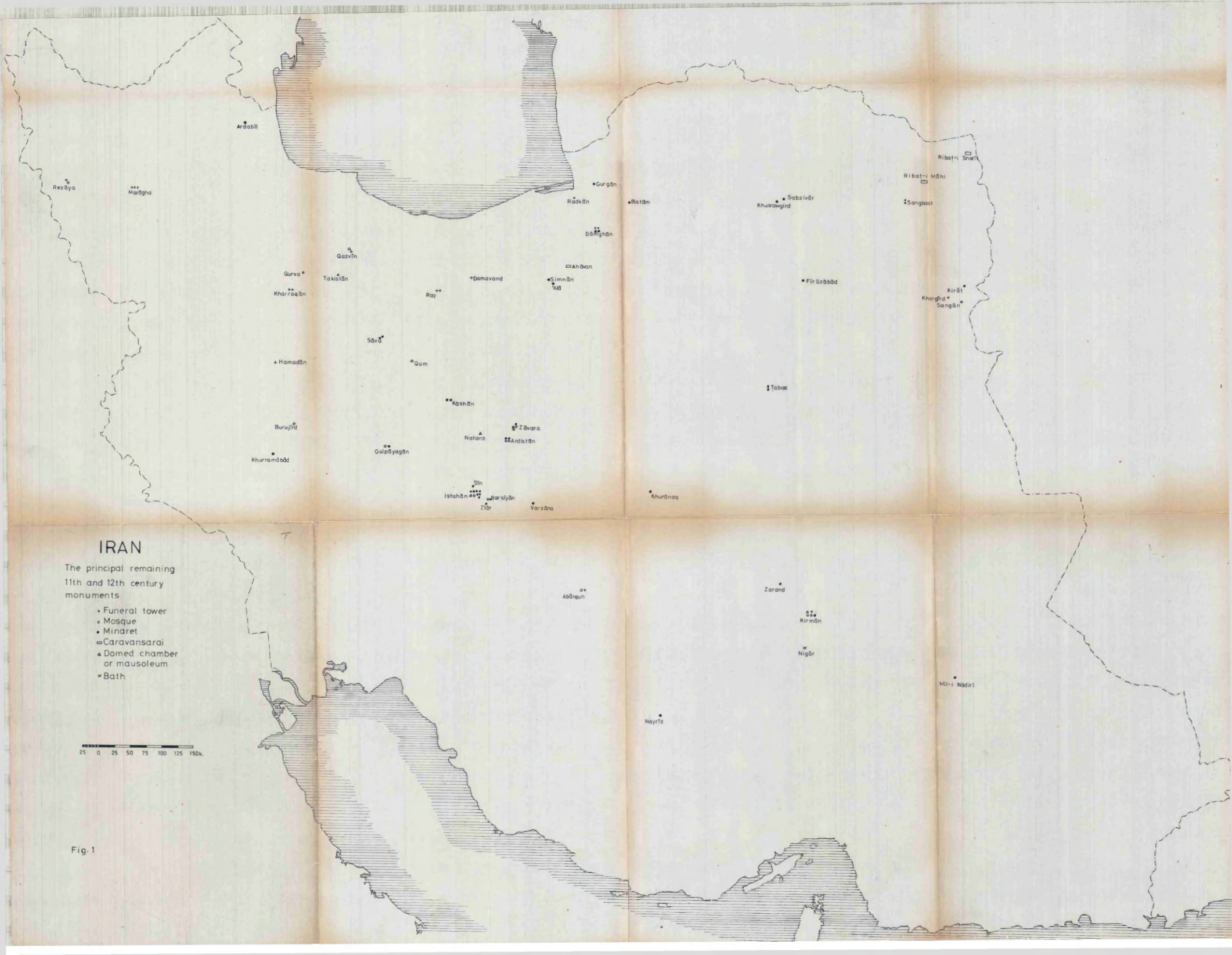

IRAN
The principal remaining 11th and 12th century monuments
• Funeral tower
◦ Mosque
• Minaret
▭ Caravansarai
▲ Domed chamber or mausoleum
× Bath
25 0 25 50 75 100 125 150k.
Ardabīl
Rezāya
Marāgha
Gurgān
Rādkān
Bistām
Dāmghān
Qazvīn
Ahāvan
Qurva
Takistān
Damavand
Simnān
Āmī
Kharraqān
Ray
Sāvā
Hamadān
Qum
Kāshān
Burujird
Natanz
Zāvara
Ardistān
Gulpāyagān
Khurramābād
Istahān
Barsiyān
Zīār
Varzāna
Khurānaq
Ribat-i Sharf
Ribat-i Māhi
Sabzivār
Khusrawgird
Sangbast
Firūzābād
Kirāt
Khargird
Sangān
Tabas
Abārquh
Zarand
Kirmān
Nigār
Mīl-i Nādirī
Nayrīz
Fig. 1

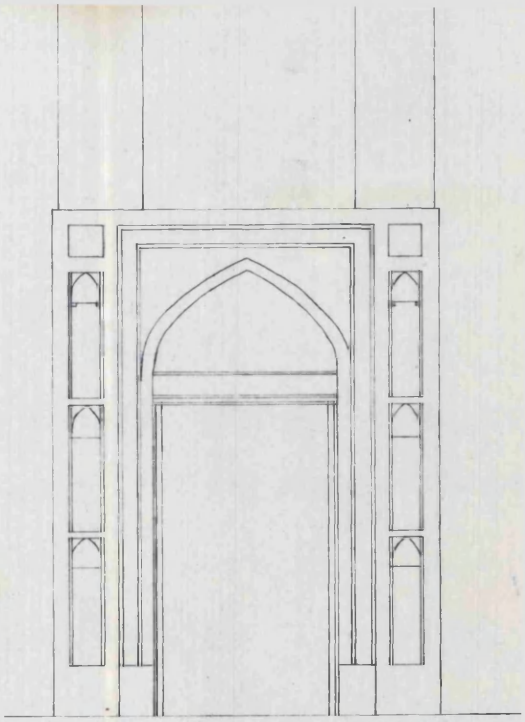
Fig. 16

# MASJID-I-IMĀM HASAN

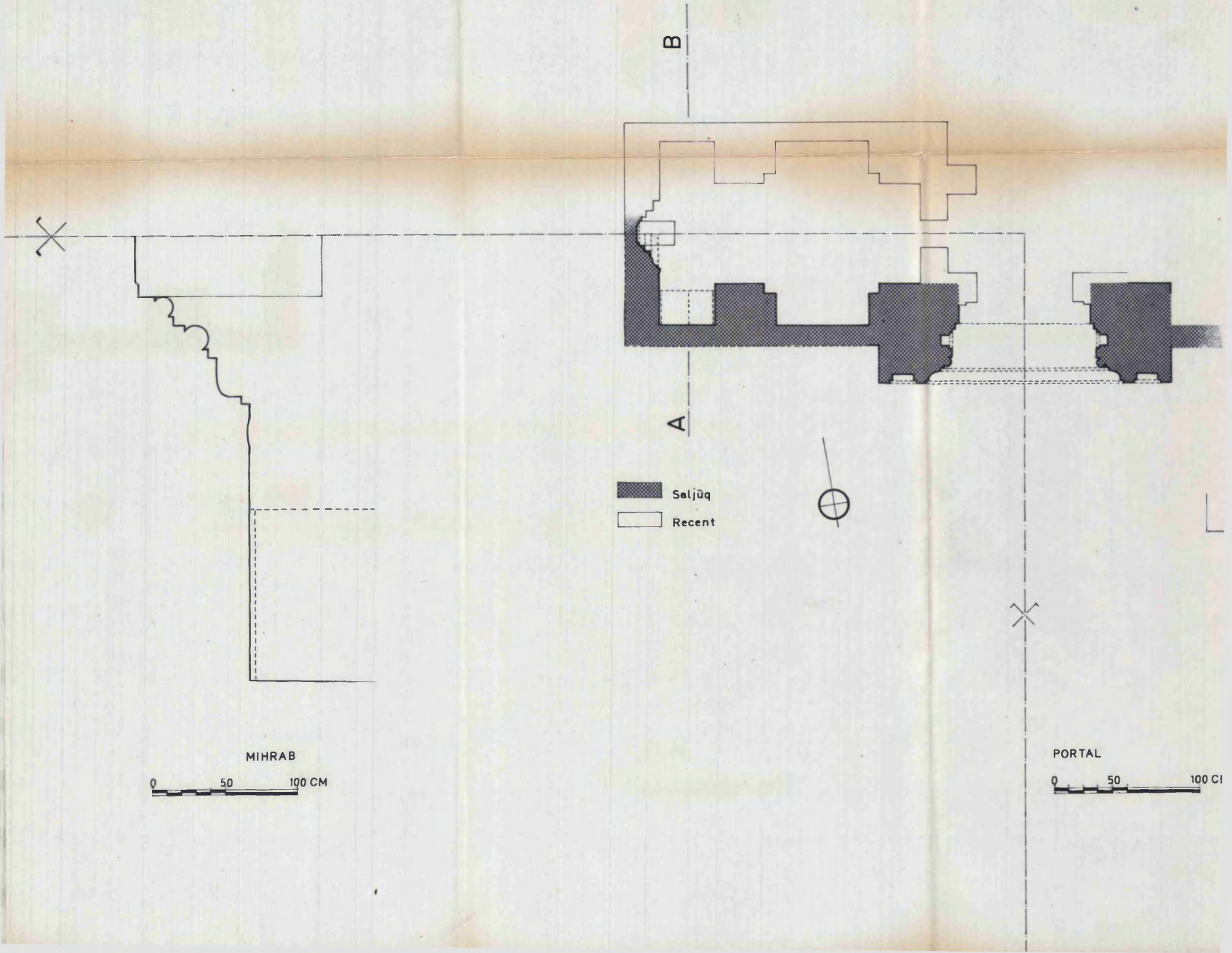
ARDISTĀN 1969

A. Labrousse arch

0 1 2 3 4 5 10M



PORTAL ELEVATION




MIHRAB

0 50 100 CM

PORTAL

0 50 100 CI

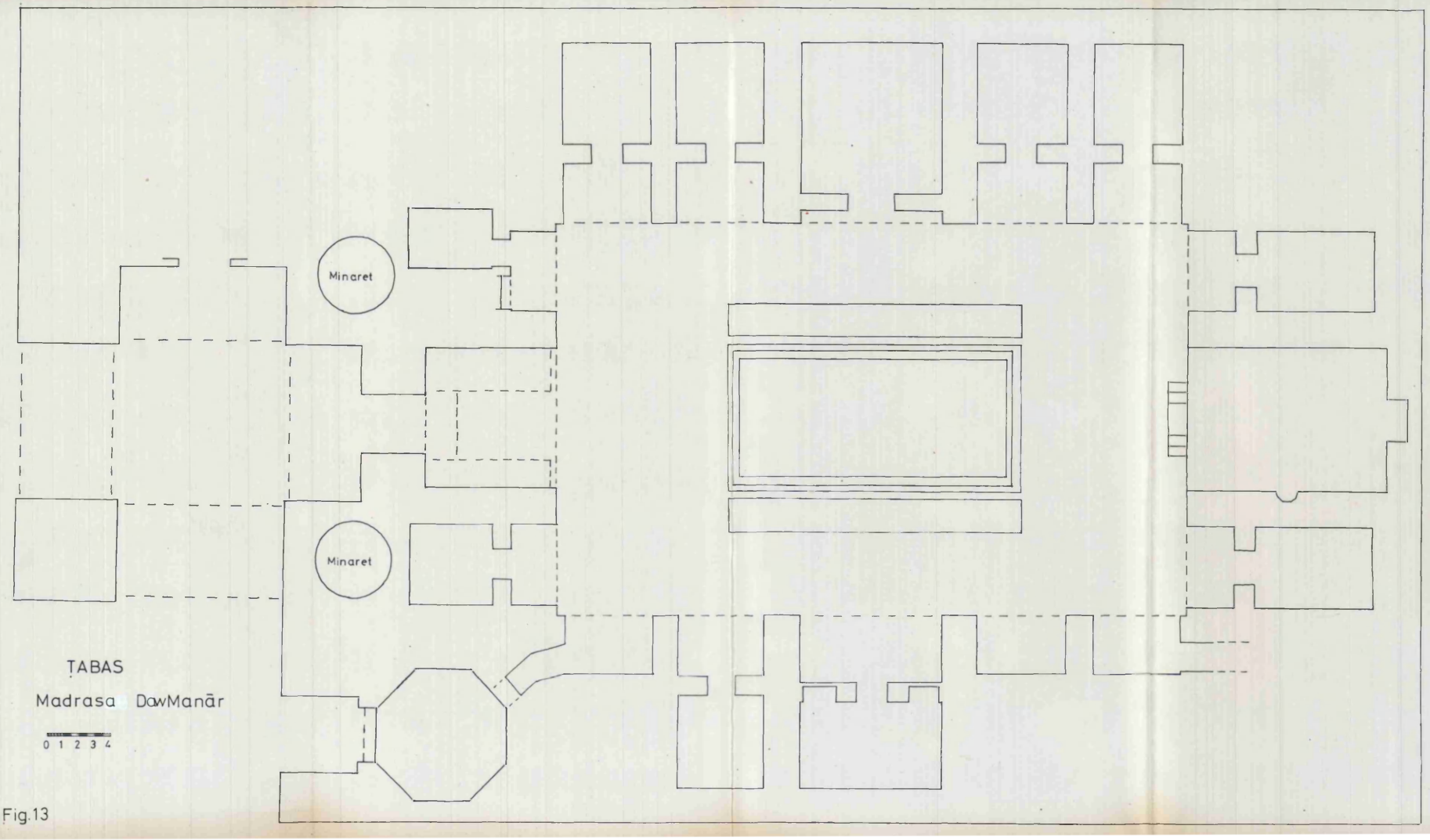



Fig.13

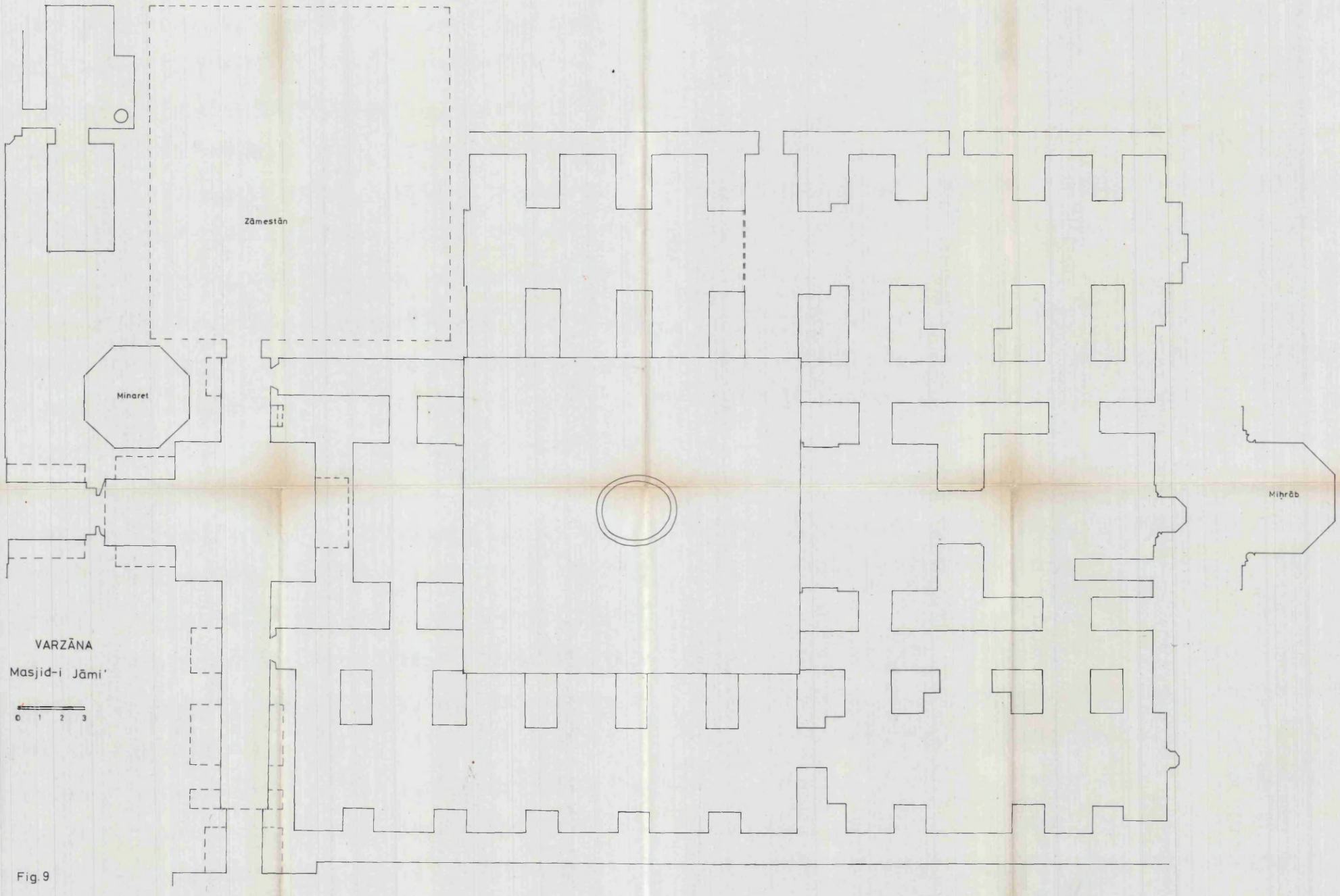



Fig. 9

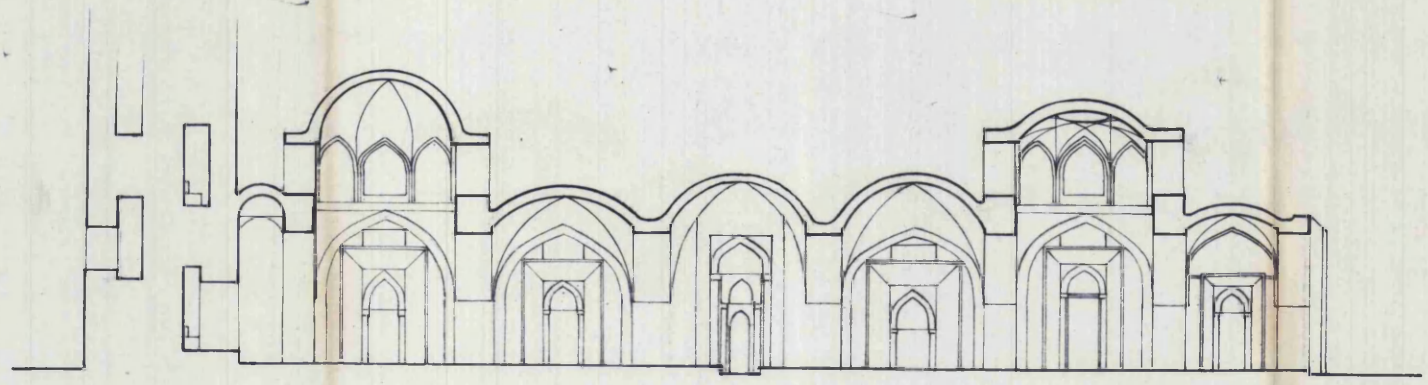
Fig. 4

# MASJID -I- PĀ MANĀR

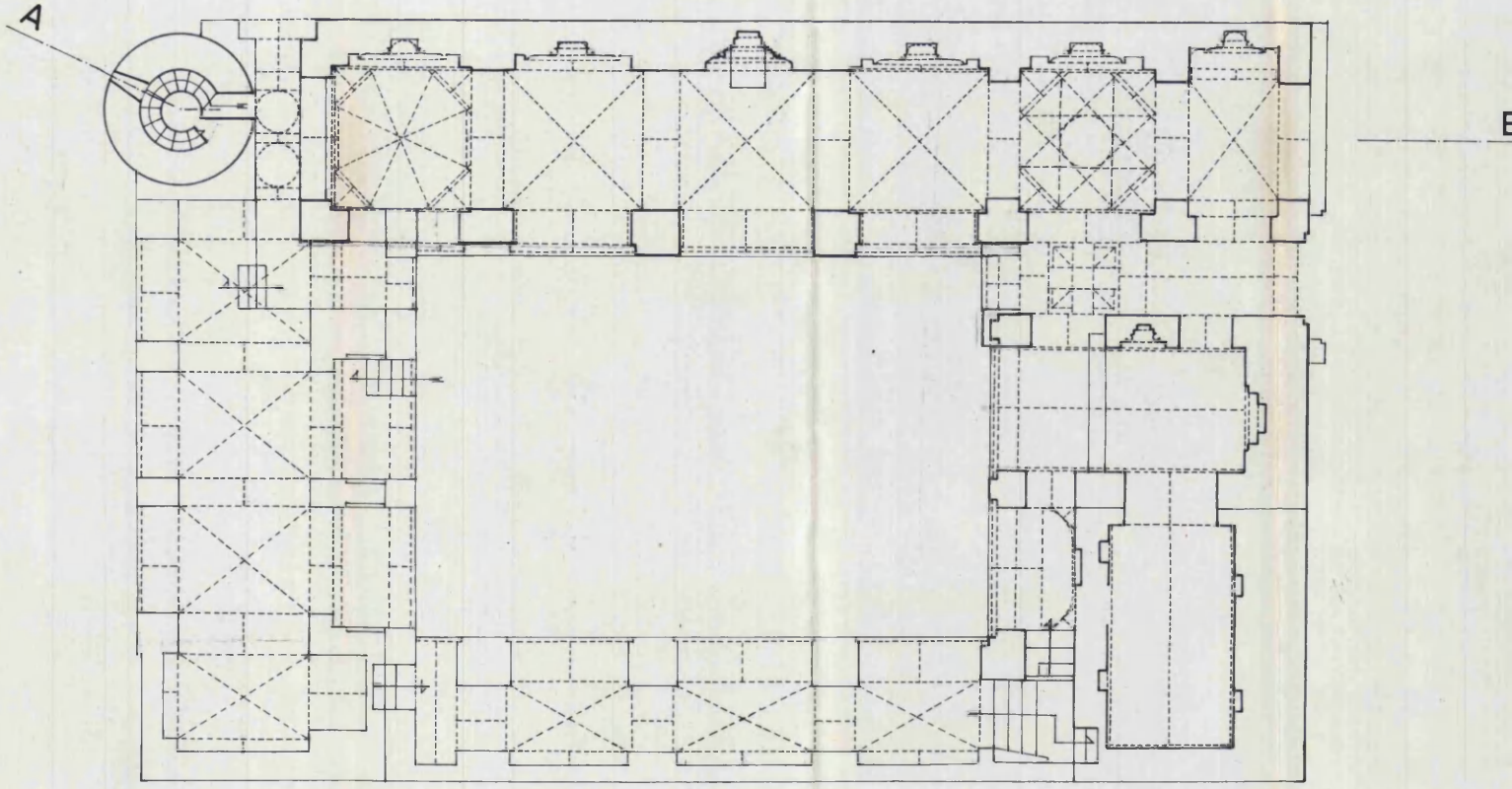
ZAVĀRA 1969

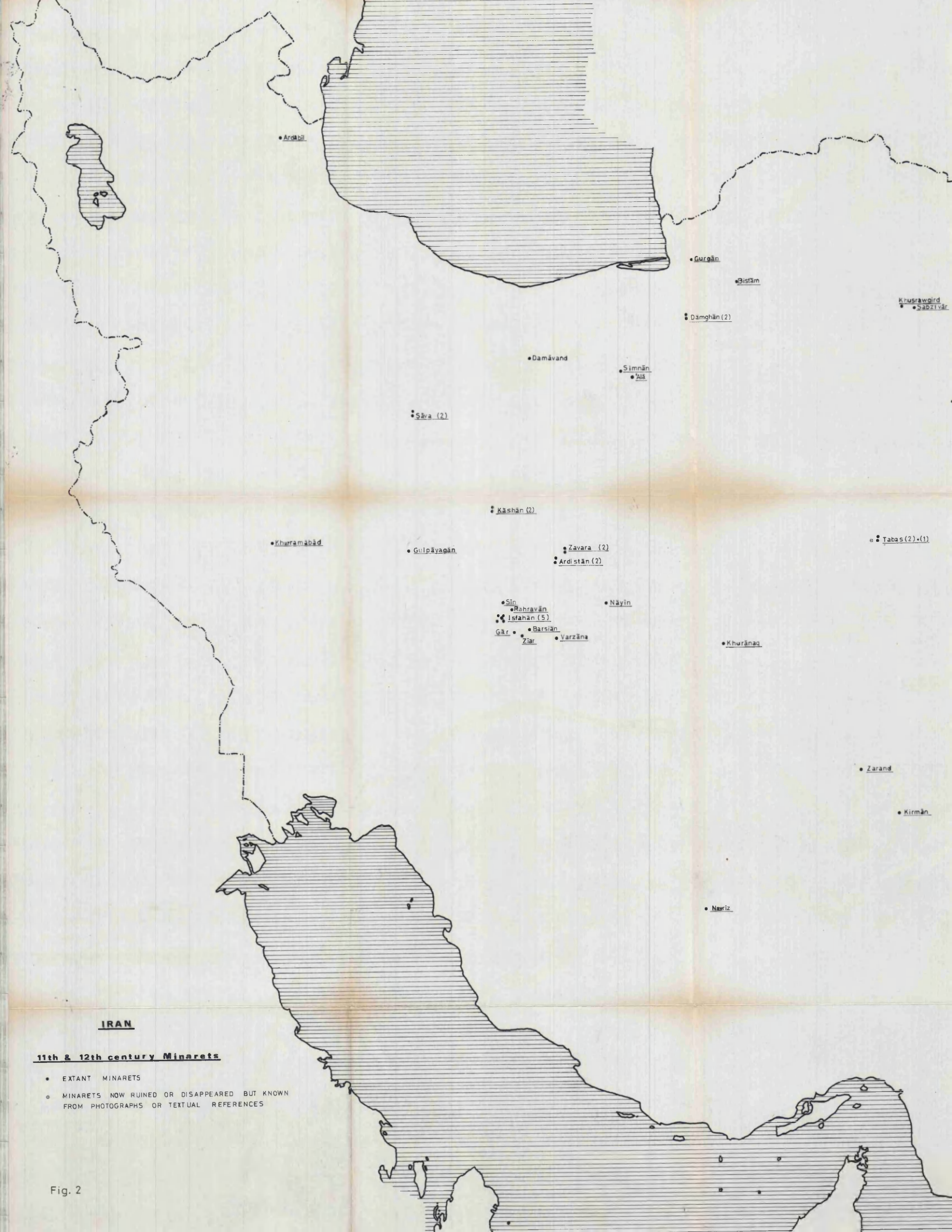
A. Labrousse arch

0 1 2 3 4 5M



SECTION A.B






**IRAN**

**11th & 12th century Minarets**

- • EXTANT MINARETS
- ◦ MINARETS NOW RUINED OR DISAPPEARED BUT KNOWN FROM PHOTOGRAPHS OR TEXTUAL REFERENCES

Fig. 2

# PLATES

Plates.

1. Nāyīn, Masjid-i Jāmi'. The main portal and the minaret. The dome is that of a later mausoleum, not attached to the mosque.
2. Nāyīn, Masjid-i Jāmi'. Courtyard of the mosque during restoration showing the minaret and two of the engaged brick columns with 10th century brick patterns.
3. Nāyīn, Masjid-i Jāmi'. The northeastern facade of the courtyard showing the engaged brick columns and the brick decoration on the pīshtāq frame of the central īvān.
4. Nāyīn, Masjid-i Jāmi'. The qibla facade of the courtyard with engaged brick columns. The pīshtāq frame of the central īvān has disappeared.
5. Nayrīz, Masjid-i Jāmi'. General view showing the relation of the minaret to the great qibla īvān.
6. Nayrīz, Masjid-i Jāmi'. Upper section of the minaret to show the simple brick patterns.
7. Sangbast. View of minaret and the tomb of Arslān Jādhib.
8. Sangbast. Exterior of the tomb of Arslān Jādhib, and interior view showing the corner arch and the brick fret design infill.
9. Sangbast. Dome interior and Kūfic inscription.
10. Dāmghān, Tarīk Khāna. View of the minaret from the sanctuary.
11. Simnān, Masjid-i Jāmi'. The minaret as it appears above the roof
12. Simnān, Masjid-i Jāmi'. The fret designs on the minaret.
13. Simnān, Masjid-i Jāmi'. The basket weave patterns and the inscription.
14. Dāmghān, Masjid-i Jāmi'. General view of the minaret.
15. Dāmghān, Masjid-i Jāmi'. The upper brick fret designs and the faience tile inscription.
16. Dāmghān, Masjid-i Jāmi'. The lower brick fret designs and one of the basket weave patterns with two guard-bands.

17. Dāmghān, Masjid-i Jāmi'. Minaret inscription framed by carved terracotta guard-bands. Both inscription and guard-bands have lost the stucco infill.

18. Sāva, Masjid-i Maydān. The minaret as partially enveloped by the later mosque.

19. Sāva, Masjid-i Maydān. Upper section of the minaret showing the inscription and decorative zone below the later cupola.

20. Sāva, Masjid-i Maydān. Details of the inscription and the eight-pointed star design of the pattern zone.

21. Zavara, Masjid-i Pāmanār. Upper section of the minaret showing the remains of the muqarnas of the crown.

22. Zavara, Masjid-i Pāmanār. Lower part of the minaret showing the inscription on the exposed side with the stucco infill removed.

23. Zavara, Masjid-i Pāmanār. Details of the inscription showing the original stucco infill.

24. Damavand, Masjid-i Jāmi'. The original minaret with part of the new mosque.

25. Zarand, Masjid-i Jāmi'. The remains of the minaret within the riwaq of the later mosque.

26. Zarand, Masjid-i Jāmi'. Detail of the minaret showing the basket weave pattern and the alternate round and angular flanges.

27. Mīl-i Nādirī. General view of tower and detail of upper brick pattern.

28. Kāshān, Masjid-i Jāmi'. Minaret, showing overall pattern and inscription.

29. Kāshān, Masjid-i Jāmi'. Inscription detail.

30. Kirmān, Masjid-i Malik. The outer face of the minaret before clearance operations.

31. Kirmān, Masjid-i Malik. Inner face of the minaret before cleaning.

32. Kirmān, Masjid-i Malik. Outer face of the minaret after cleaning showing the newly revealed stucco revetment of the guard-band.

33. Kirmān, Masjid-i Malik. Inner face of minaret after clearance.

34. Kirmān, Masjid-i Malik. Detail of guard-band after clearance.

35. Kirmān, Masjid-i Malik. Base of minaret after clearing showing the construction method and the area left for the facing bricks forming the brick patterns.

36. Kīrāt. General view of minaret.

37. Kīrāt. Upper section of minaret.

38. Kīrāt. Lower section of minaret.

39. Kīrāt. Details of brick fret designs and of restored base and entrance.

40. Kīrāt. Details of inscription, with and without stucco infill.

41. Kīrāt. Details of balcony supports showing wooden beams and remains of muqarnas.

42. Ardabīl, Masjid-i Jāmi'.

43. 'Alā. Minaret showing brick patterns and crown.

44. Barsiyān, Masjid-i Jāmi'. General view of minaret and later dome chamber.

45. Barsiyān, Masjid-i Jāmi'. Upper section of minaret showing inscription and brick patterns.

46. Barsiyān, Masjid-i Jāmi'. Lower section of minaret.

47. Varzāna, Masjid-i Jāmi'. General view of minaret.

48. Varzāna, Masjid-i Jāmi'. Upper section of minaret.

49. Varzāna, Masjid-i Jāmi'. Details of minaret showing channels in brickwork, possibly sockets for balcony supports, and remaining section of brickwork pattern on base.

50. Gulpāyagān. General view of minaret.

51. Gulpāyagān. Details of upper section showing overlay pattern and remains of crown, and the restored base with inscription, brick panels and engaged colonettes.

52. Gulpāyagān. Details of base inscription and patterns

53. Isfahan, Chihil Dukhtarān. General view of minaret.

54. Isfahan, Chihil Dukhtarān. Details of crown and upper section showing window and overlay pattern of stars and octagons.

55. Isfahan, Chihil Dukhtarān. Base showing various accretions to octagon.

56. Isfahan, Chihil Dukhtarān. Details of the naskhi and plinth inscriptions.

57. Isfahan, Chihil Dukhtarān. Detail of pattern consisting of a series of triskeles within triangles.

58. Isfahan, Chihil Dukhtarān. Detail of base showing brick fret and basket weave patterns.

59. Sāva, Masjid-i Jāmi'. General view of minaret.

60. Sāva, Masjid-i Jāmi'. Details of carved terracotta guard-bands and brick inscription.

61. Sāva, Masjid-i Jāmi'. Details of lower pattern zone, probably based on Kūfic lettering, showing carved stucco insets.

62. Khusrawgird. General view of minaret.

63. Khusrawgird. Upper section of minaret showing brick fret and basket weave patterns and upper inscriptions.

64. Khusrawgird. Lower basket weave patterns with terracotta insets and lower inscription band.

65. Khusrawgird. Detail of lower inscription.

66. Bistām. General view of minaret.

67. Bistām. Details of crown showing muqarnas.

68. Bistām. Details of upper pattern bands showing carved terracotta and stucco design and inscription band.

69. Bistām. Brick fret designs.

70. Gār. General view of minaret.

71. Gār. Details showing rectangular naskhi design and remains of balcony projection, and details of the base inscription and its rectangular naskhi design.

72. Sīn, Masjid-i Jāmi'. Overall pattern design and detail of minaret base showing partially revealed inscription,

73. Sīn, Masjid-i Jāmi'. Top of minaret showing faience inscription.

74. Isfahan, Masjid-i Sha'īā. Minaret as set in later mosque.

75. Isfahan, Masjid-i Sha'īā. Details showing upper pattern section and plian octagonal base.

76. Isfahan, Manār Guldasta. General view of minaret within bazaar.

77. Isfahan, Manār Guldasta. Details showing pattern design and door.

78. Fīrūzābād. General view of minaret.

79. Fīrūzābād. Details of upper basket weave pattern, possibly based on rectangular naskhi, and lower inscription.

80. Fīrūzābād. Details showing vertical cursive inscription and main basket weave pattern.

81. Zavara, Masjid-i Jāmi'. General view of minaret showing base link to mosque.

82. Zavara, Masjid-i Jāmi'. Detail showing upper pattern section and guard-band with two remaining tiles of original alternate hexagonal and spindle shaped tile band.

83. Ardistān, Masjid-i Jāmi'. Visible section of minaret.

84. Gurgān, Masjid-i Jāmi'. General view of minaret within later mosque.

85. Gurgān, Masjid-i Jami'. Details of upper pattern band and of inscription within carved terracotta guard-bands.

86. Khurānaq, Masjid-i Jāmi'. General view of minaret and mosque.

87. Sabzivār, Masjid-i Pāmanār. Section of the minaret visible above the roof of the later mosque.

88. Sabzivār, Masjid-i Pāmanār. Detail of inscription and main basket weave pattern with faience insets.

89. Tabas, Madrasa DawManār. General view of courtyard showing minarets above portal īvān.

90. Tabas, Madrasa DawManār. One of the minarets showing the pattern details obliterated by recent restoration.

91. Tabas, Madrasa DawManār. Inscription detail.

92. Ardistān, Masjid-i Imām Hasan. Remains of minaret set behind portal facade.

93. Isfahan, Manār 'Alī. General view of minaret.

94. Isfahan, Manār 'Alī. Details of balconies.

95. Isfahan, Manār 'Alī. Lower section of minaret showing channel cut design.

96. Isfahan, Manār 'Alī. Square Kūfic inscription on base of minaret.

97. Isfahan, Manār Sarabān. Upper section showing both balconies.

98. Isfahan, Manār Sarabān. Lower section showing rectangular naskhi pattern and base.

99. Isfahan, Manār Sarabān. Detail of lower balcony showing rich muqarnas.

100. Isfahan, Manār Sarabān. Detail of lower guard-band.

101. Kāshān, Manār-i Zayn al-Dīn. General view of minaret.

102. Kāshān, Manār-i Zayn al-Dīn. Detail showing wide rising joints and removed panel - possibly an inscription.

103. Isfahan, Zīār. General view of minaret.

104. Isfahan, Zīār. Details of balconies, inscription and upper patterns.

105. Isfahan,Ziar. Details of minaret shaft showing various brick patterns.

106. Khurramābād. General view of mīl/manār.

107. Khurramābād. Details of crown and window showing strokes in wide rising joints.

108. Shūshtar, Masjid-i Jāmi'. Portal facade showing both minarets, the earlier one on the left.

109. Ghazni, Tower of Mas'ūd III. General view of tower.

110. Ghazni, Tower of Mas'ūd III. Detail showing richly carved inscriptions and decorative panels, and also wooden inserts for stability.

111. Ghazni, Tower of Bahrāmshāh. General view of tower.

112. Ghazni, Tower of Bahrāmshāh. Detail showing basket weave patterns and wooden inserts for stability.

113. Isfahan, Masjid-i Jāmi'. Newly discovered Būyid column within a later pier, showing 10th century brick pattern.

114. Isfahan, Jurjīr portal. General view of recently cleared portal.

115. Isfahan, Jurjīr portal. Upper section of portal showing brick decoration of semi-dome.

116. Isfahan, Jurjīr portal. Detail of brick pattern.

117. Dāmghān, Pīr-i 'Alamdār. Detail showing brick fret design and inscription.

118. Dawlatābād. General view of minaret.

119. Dawlatābād. Detail of brick fret designs with stucco infills and overlay.

120. Dawlatābād. Inscription details showing stucco infills and overla.

121. Jām. General view of minaret.

122. Jām. Detail of base inscription showing knot varieties.

123. Jām . Detail of main Qur'anic inscription showing brick fret panel designs.

124. Jām. Details of upper carved pattern and foundation inscription.

125. Herat, Masjid-i Jāmi'. Ghūrid portal inscription.

126. Herat, Masjid-i Jāmi'. Ghūrid portal, original muqarnas remains and detail of pattern inside portal.

127. Chisht. General view of both mausolea.

128. Chisht. Details of decoration on larger mausoleum and of the inscription on the smaller mausoleum.

129. Firdaws, Masjid-i Jāmi'. Facade of qibla īvān showing carved brick and terracotta patterns.

130. Firdaws, Masjid-i Jāmi'. Qibla īvān facade, detail of pattern showing bricks with bead design incised on them.

131. Gunābād, Masjid-i Jāmi'. Qibla īvān general view.

132. Gunābād, Masjid-i Jāmi'. Inscription and patterns of qibla īvān.

133. Gunābād, Masjid-i Jāmi'. Detail of qibla īvān pattern.

134. Gunābād, Masjid-i Jāmi'. Northern īvān facade patterns.

135. Gunābād, Masjid-i Jāmi'. Minaret showing simple brick patterns.

136. Zūzan, Masjid-i Jāmi'. Facade of qibla īvān.

137. Zūzan, Masjid-i Jāmi'. Detail of main inscription showing carved background to letters.

138. Zūzan, Masjid-i Jāmi'. Detail of pattern design showing bricks with bead design incised on them.

139. Zūzan, Masjid-i Jāmi'. Ruined northern īvān.

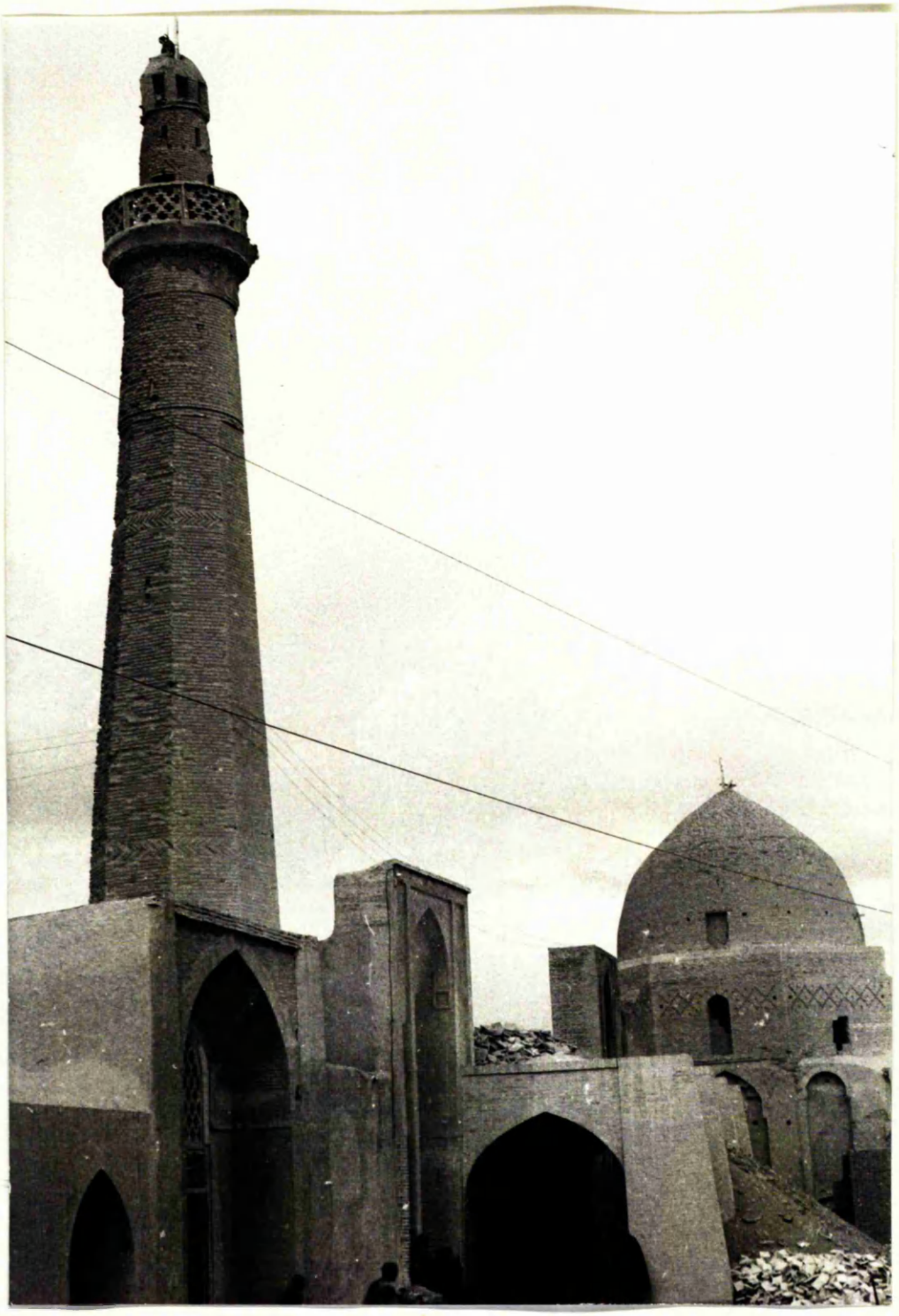
140. Farūmad, Masjid-i Jāmi'. General view of mosque.

141. Farūmad , Masjid-i Jāmi'. Details of carved stucco mihrāb.

142. Farūmad, Masjid-i Jāmi'. Carved stucco muqarnas in mihrāb.

143. Nigār, Masjid-i Jāmi'. General view of minaret showing basket weave patterns and angular flanges.

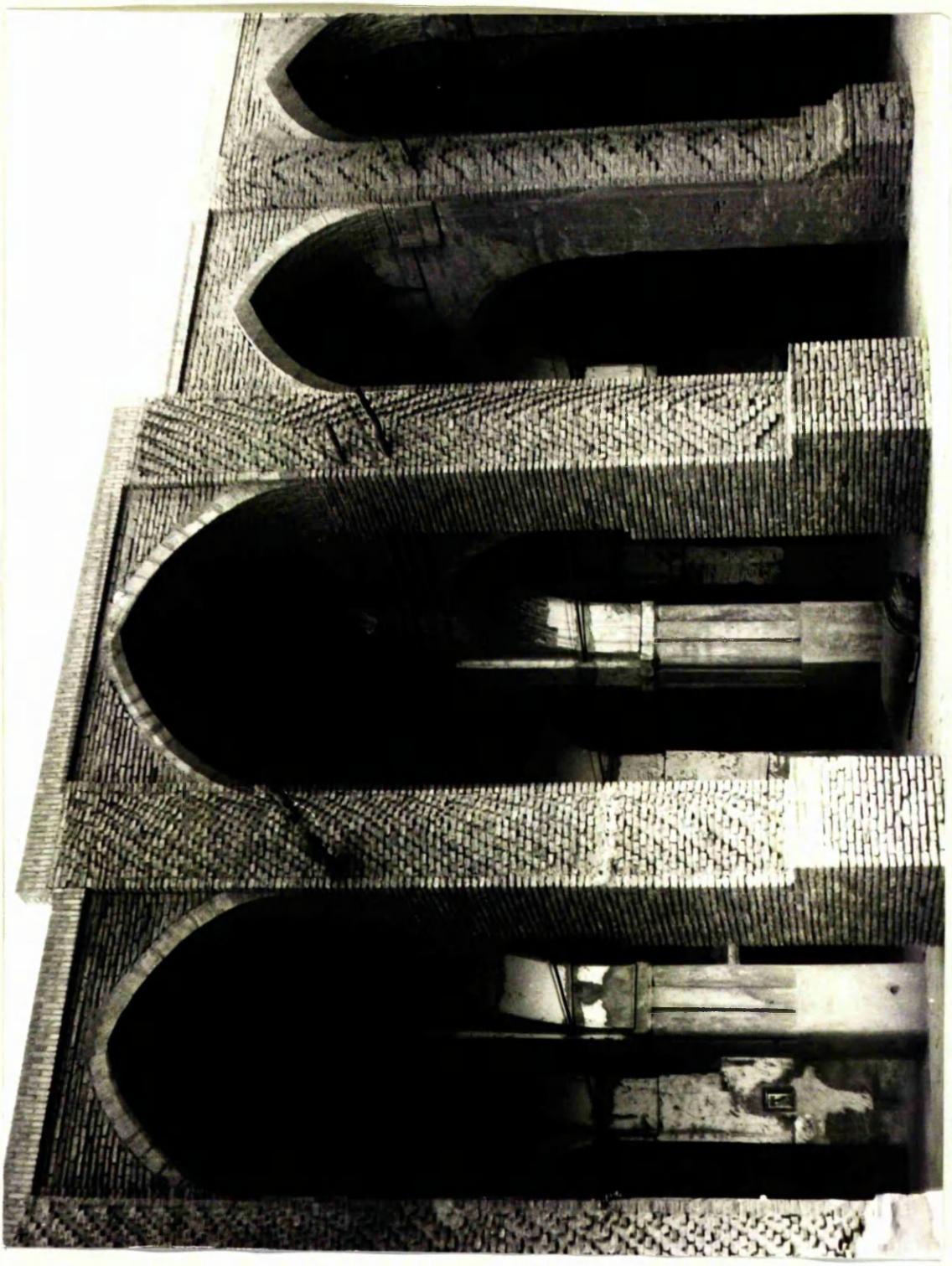
144. Nigār, Masjid-i Jāmi'. Detail of faience inscription.



Nāyīn - Masjid-i Jāmi'

Nāyīn - Masjid-i Jāmi'

Nāyīn - Masjid-i Jāmi'

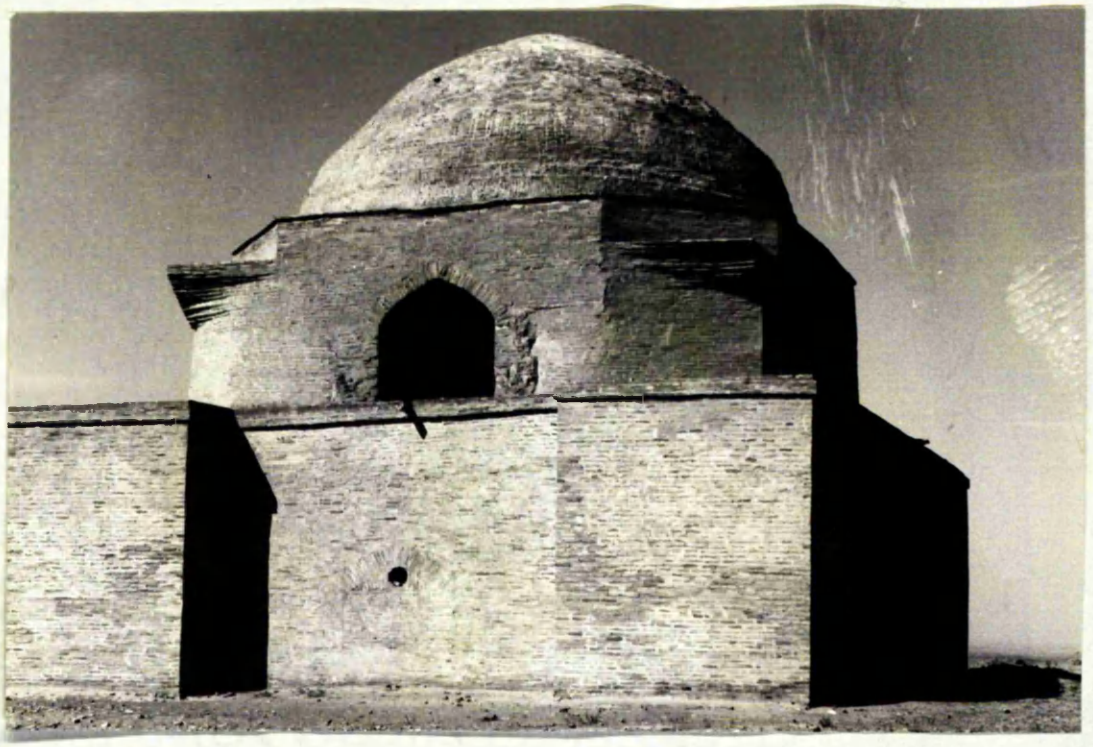


Nāyīn – Masjid-i Jāmi'

Nayrīz - Masjid-i Jāmi'

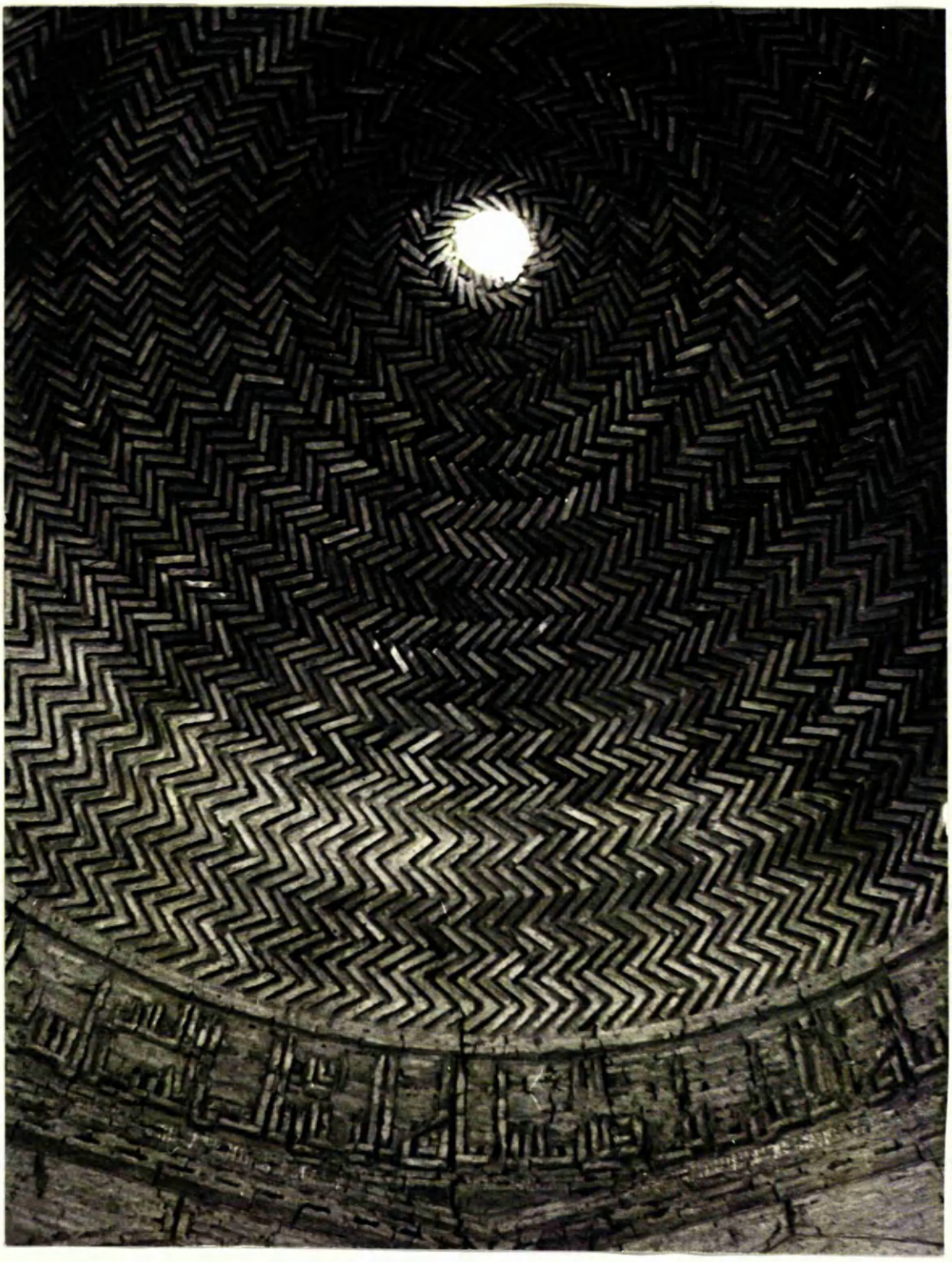
Nayrīz - Minaret

Sangbast



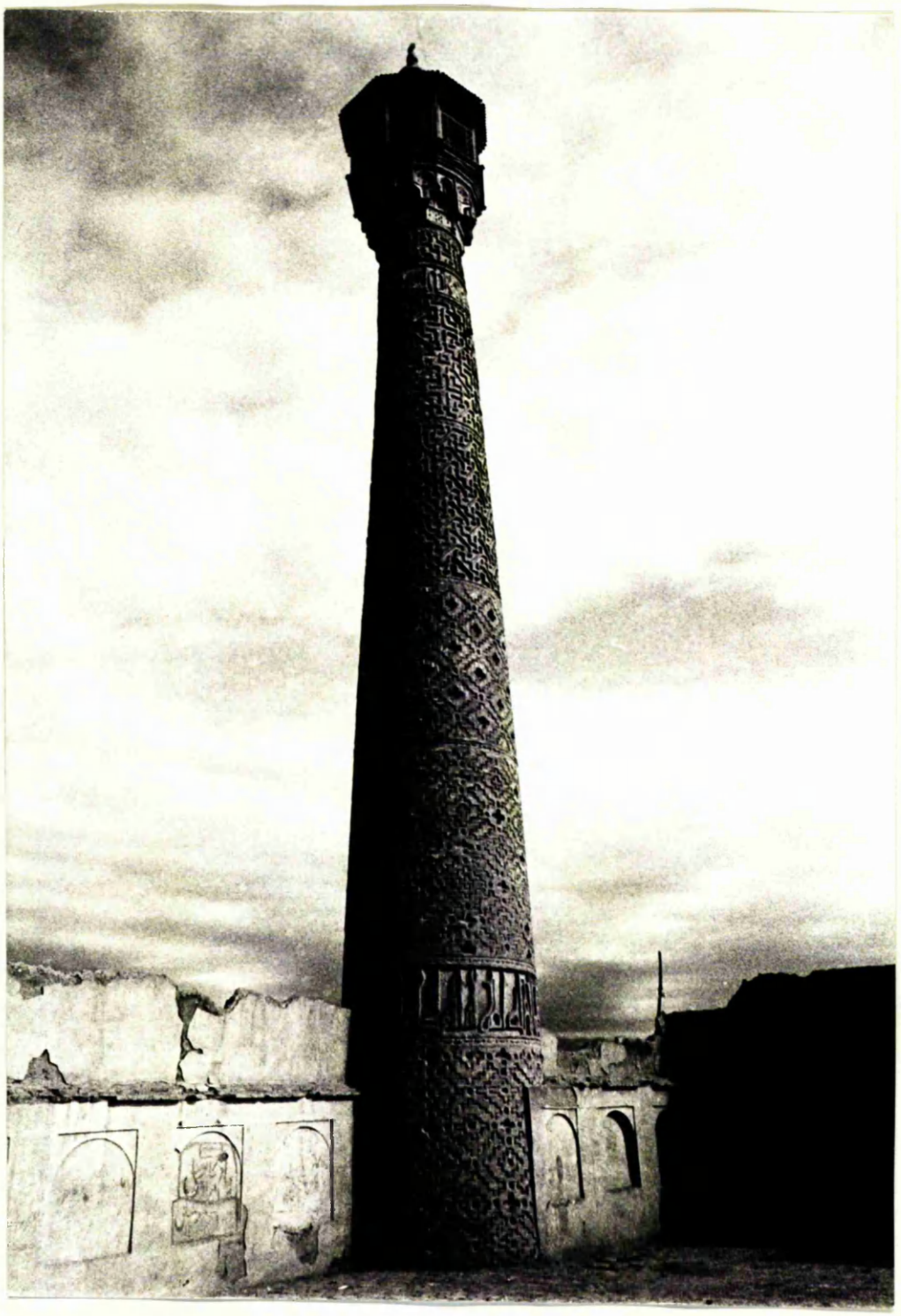
Sangbast

Sangbast

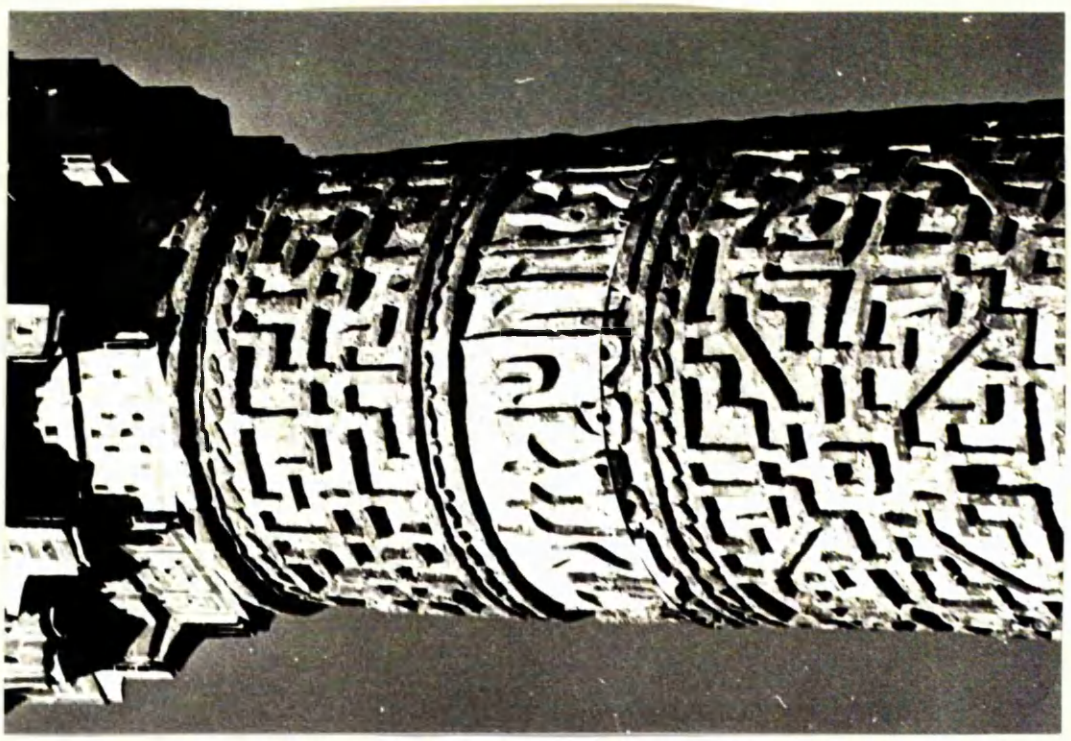


Sangbast. Dome interior

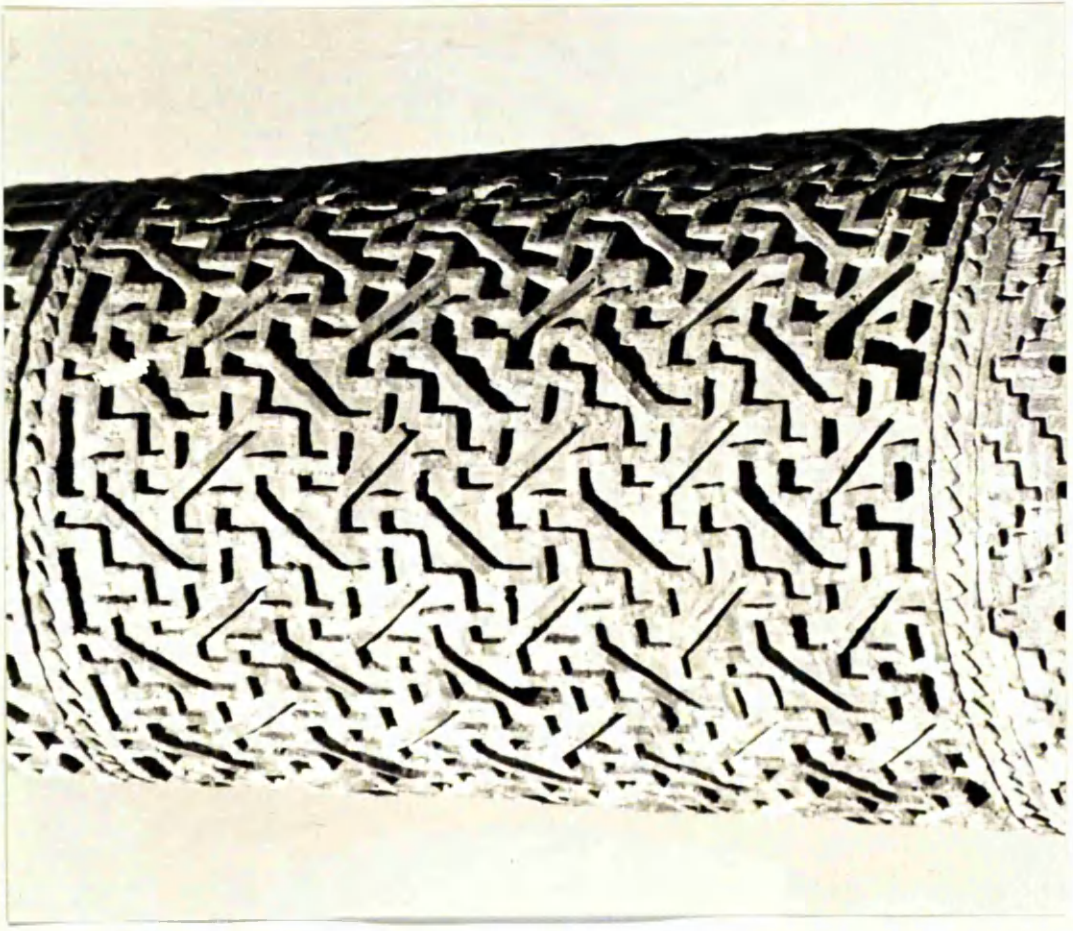
Dāmghān - Tarīk Khāna



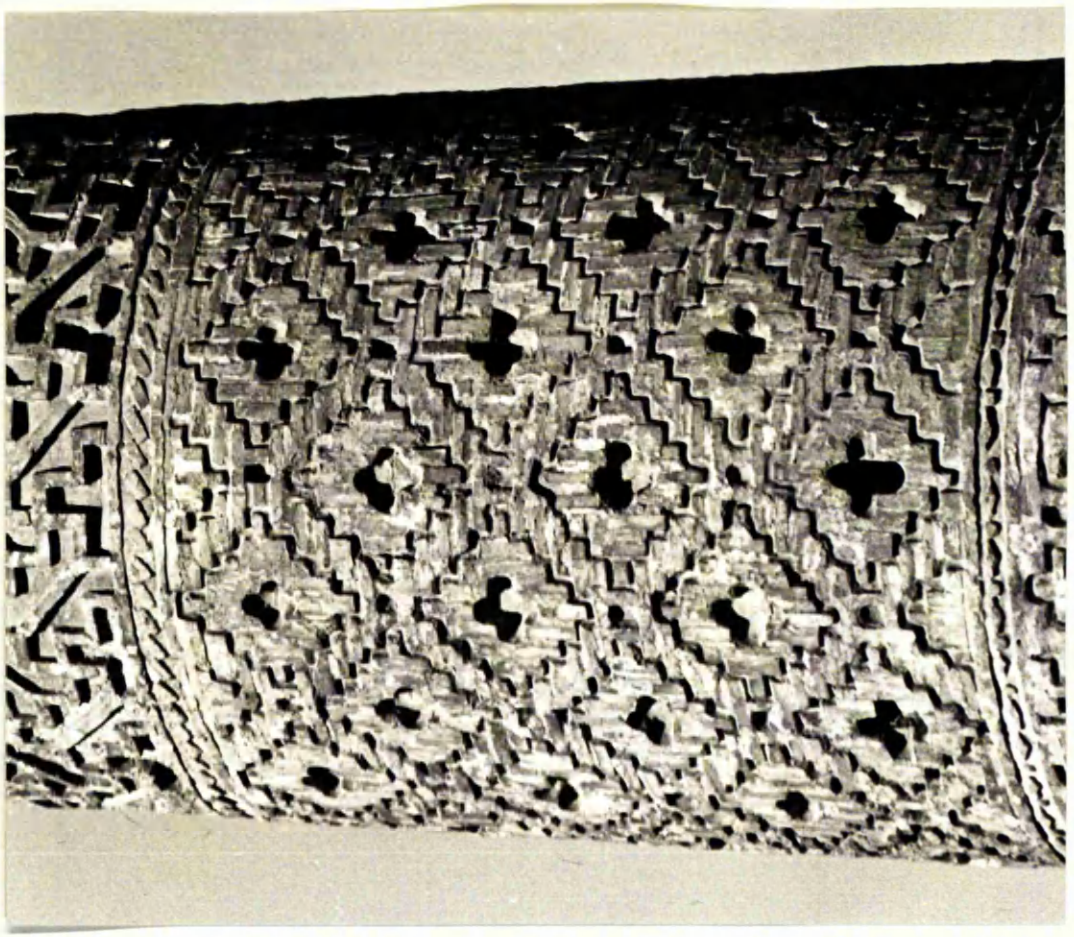
Simnān - Masjid-i Jāmi'



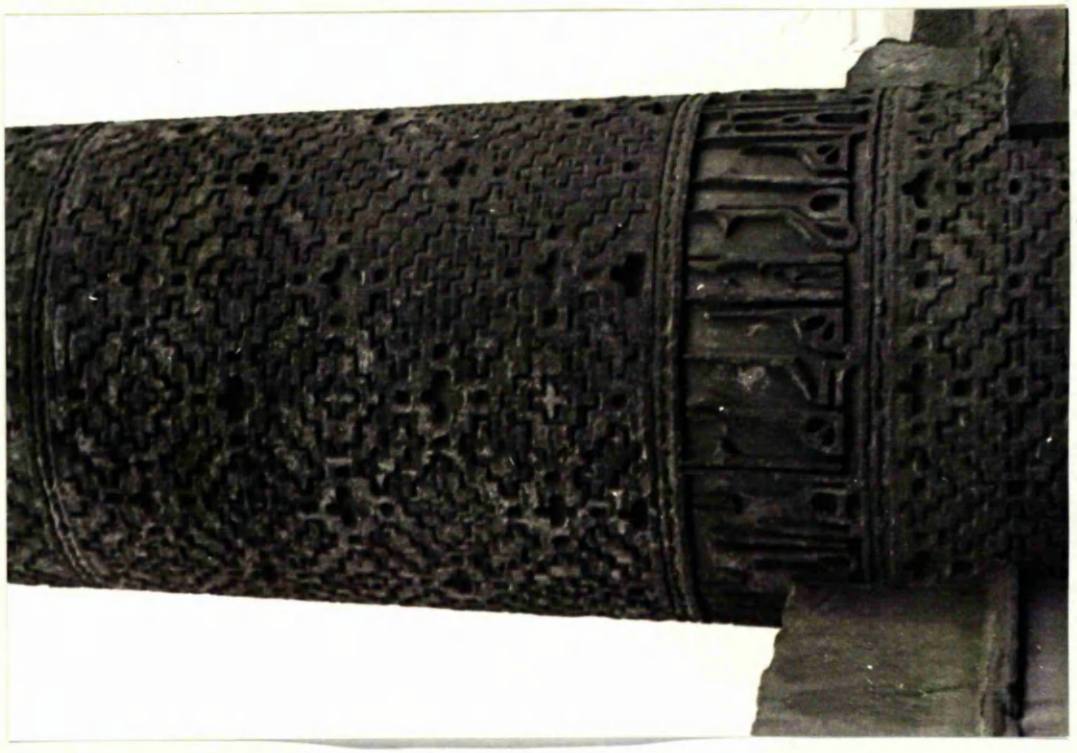
Simnān - Masjid-i Jāmi'



Simnān - Masjid-i Jāmi'

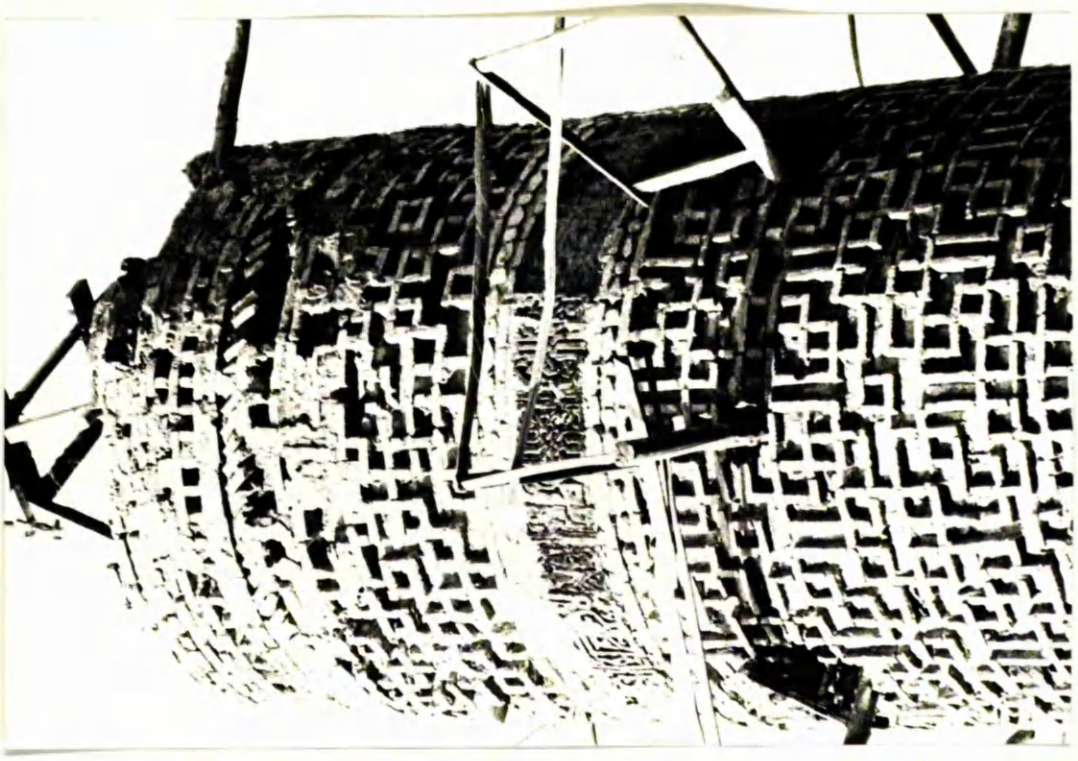


Simnān – Masjid-i Jāmi'

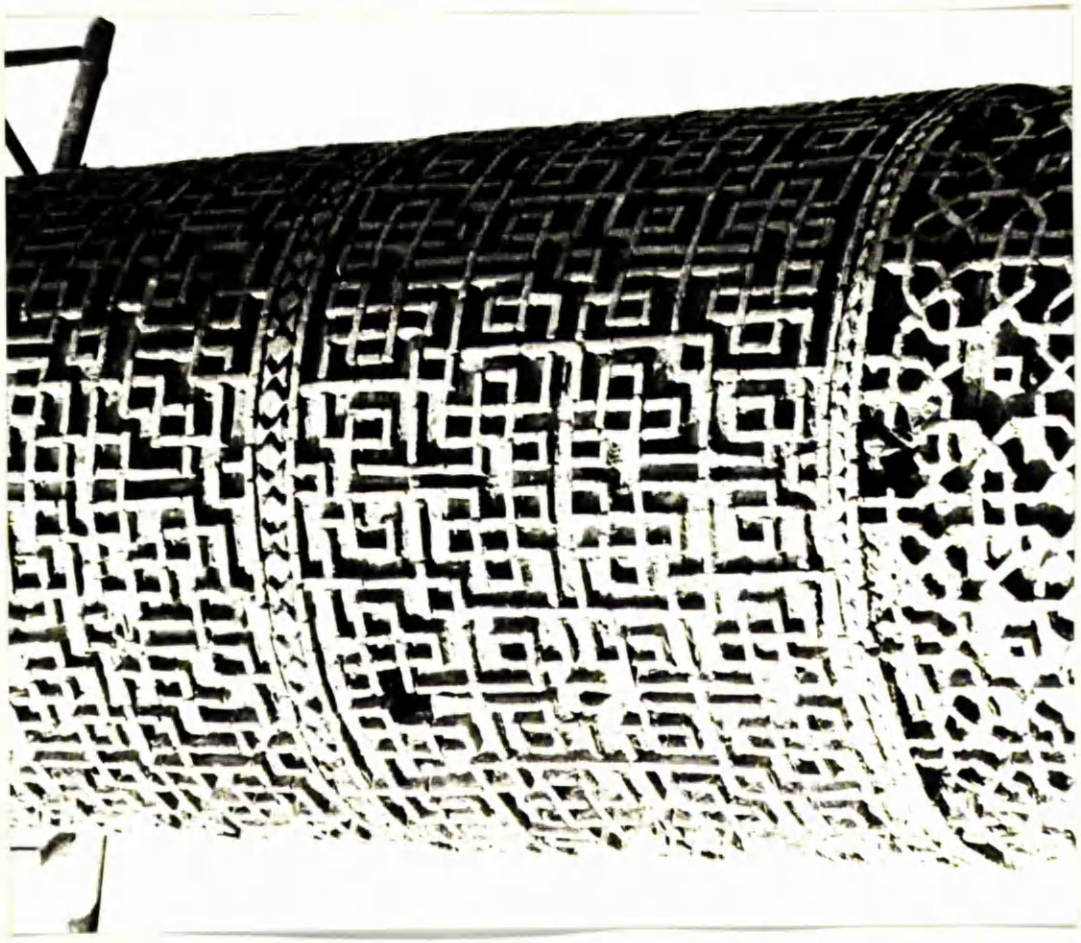


Simnān – Masjid-i Jāmi'

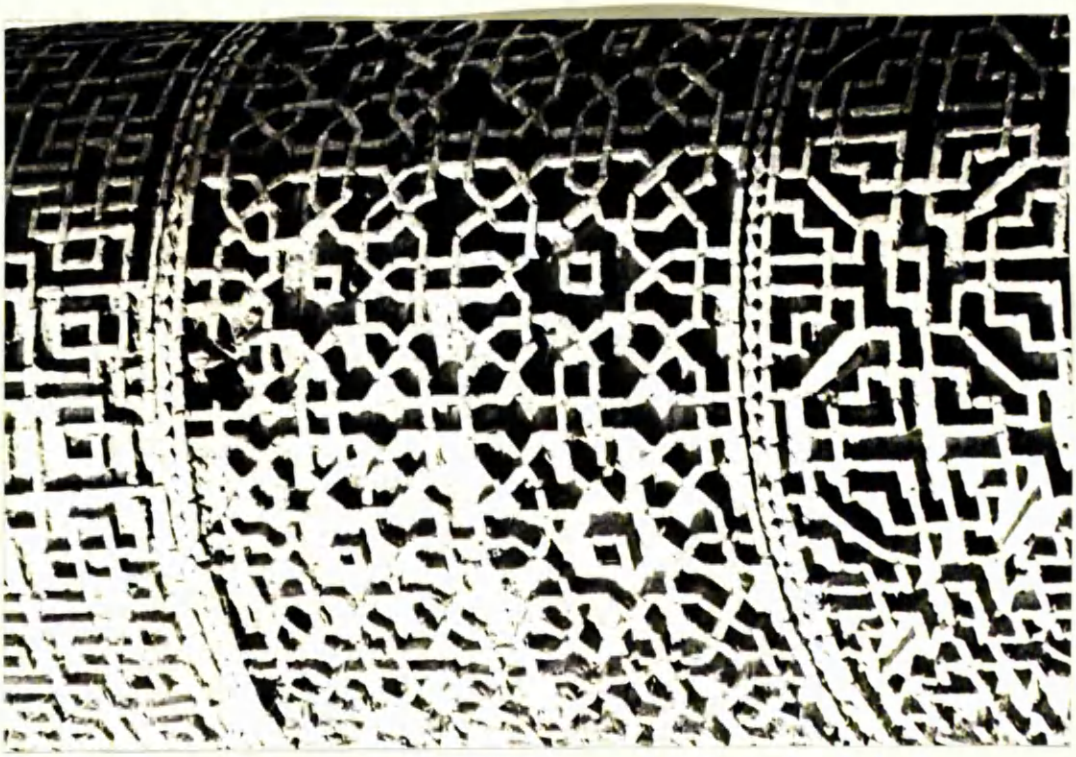
Dāmghān - Masjid-i Jāmi'



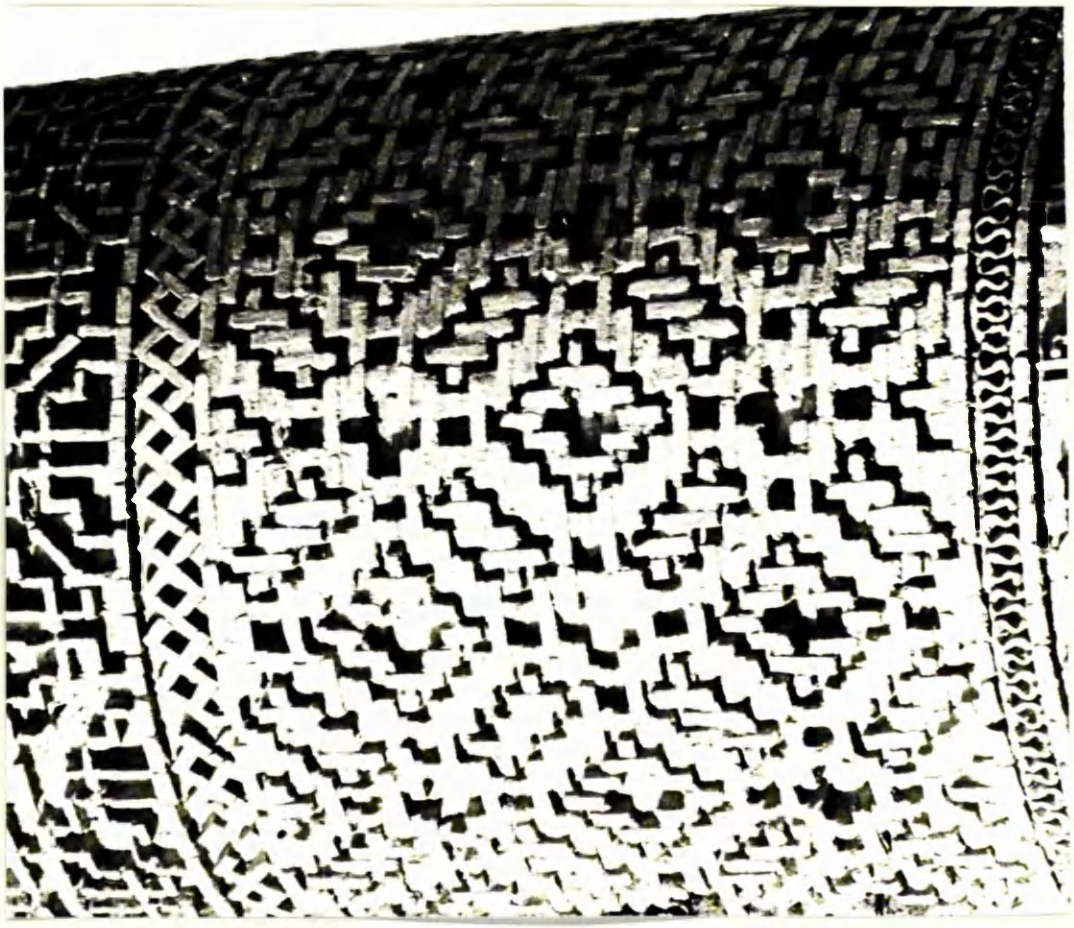
Dāmghān - Masjid-i Jāmi'. Faience tile inscription



Damghan - Masjid-i Jami

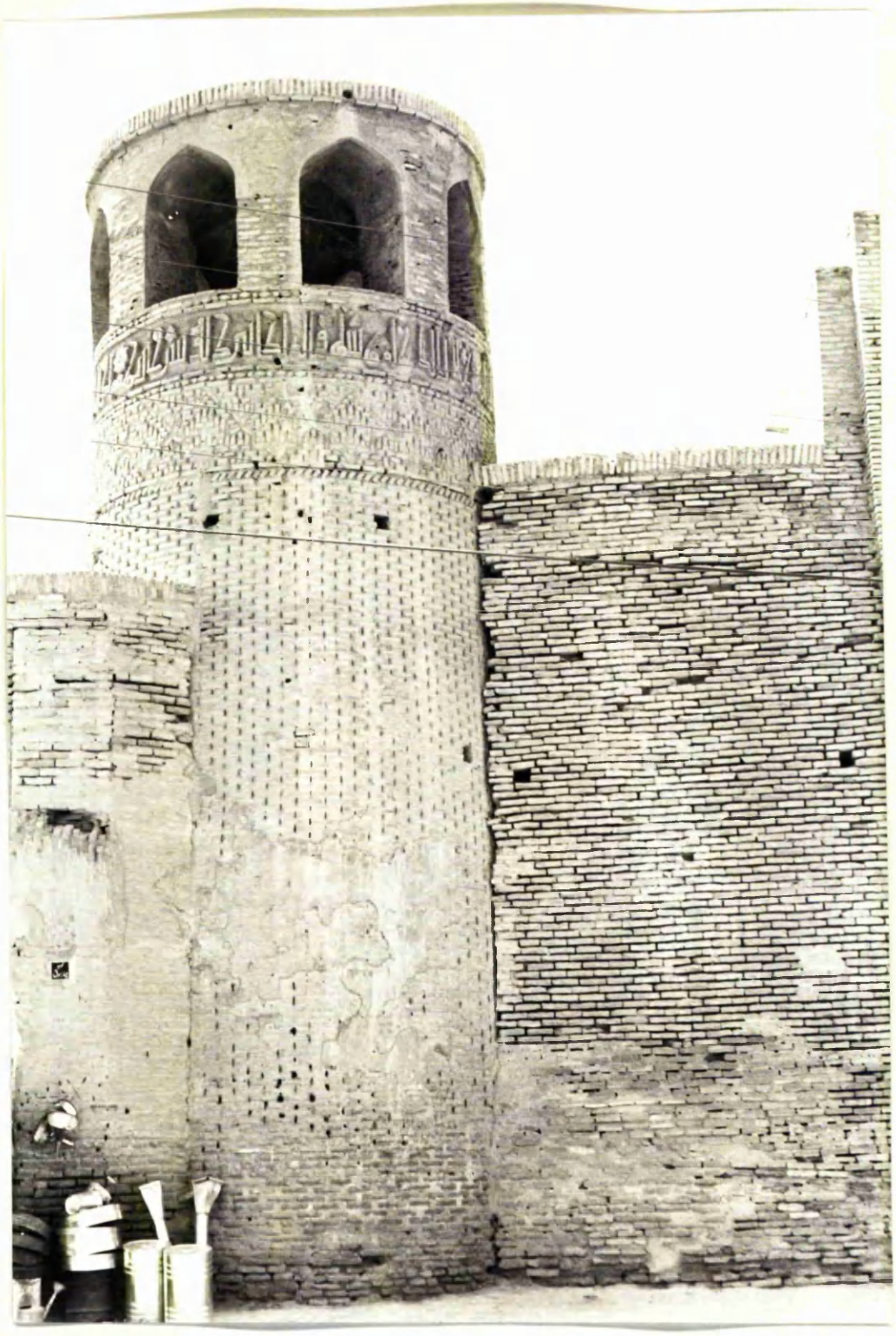


Dāmghān - Masjid-i Jāmi'

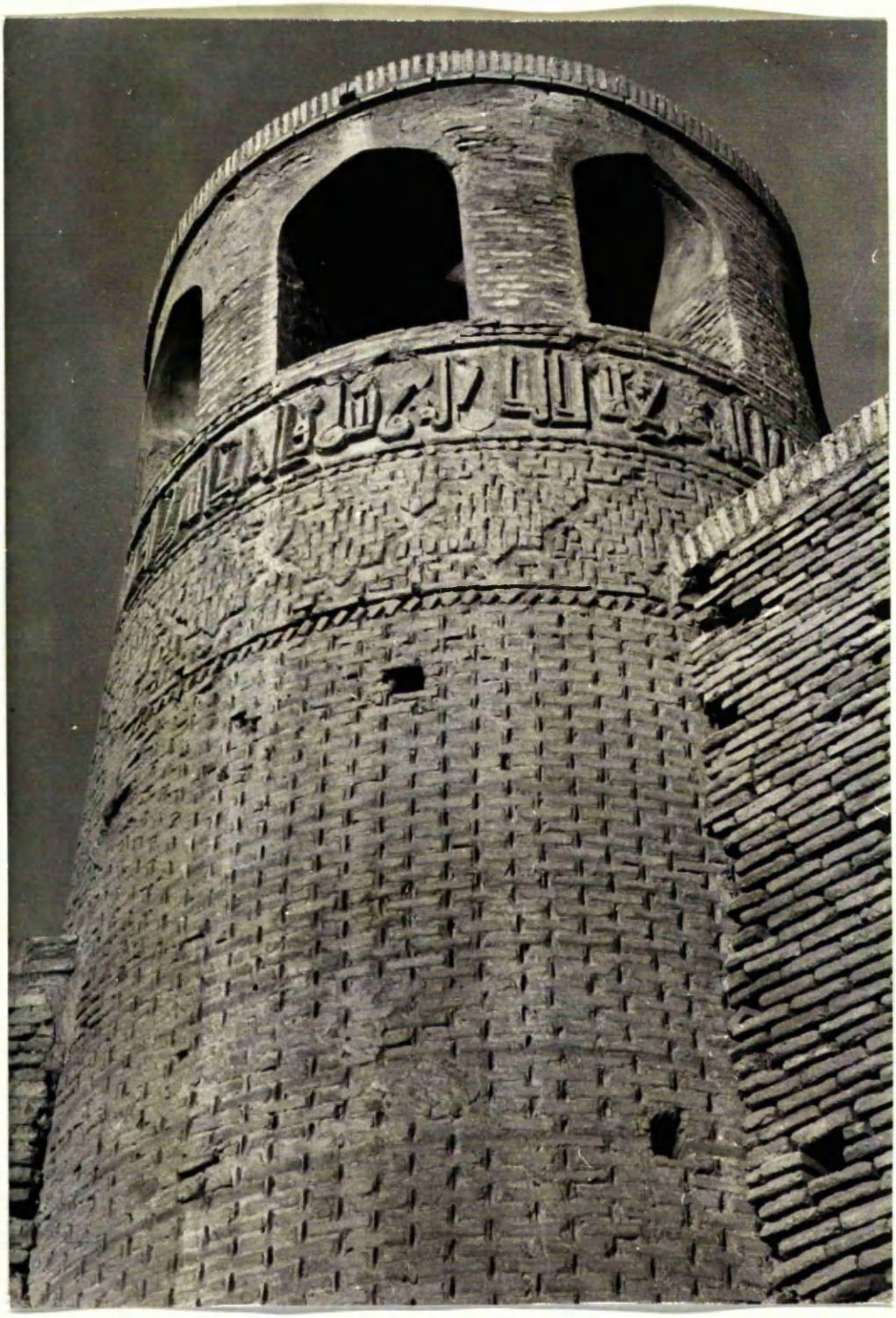


Dāmghān - Masjid-i Jāmi'

Dāmghān – Masjid-i Jāmi'. Inscription

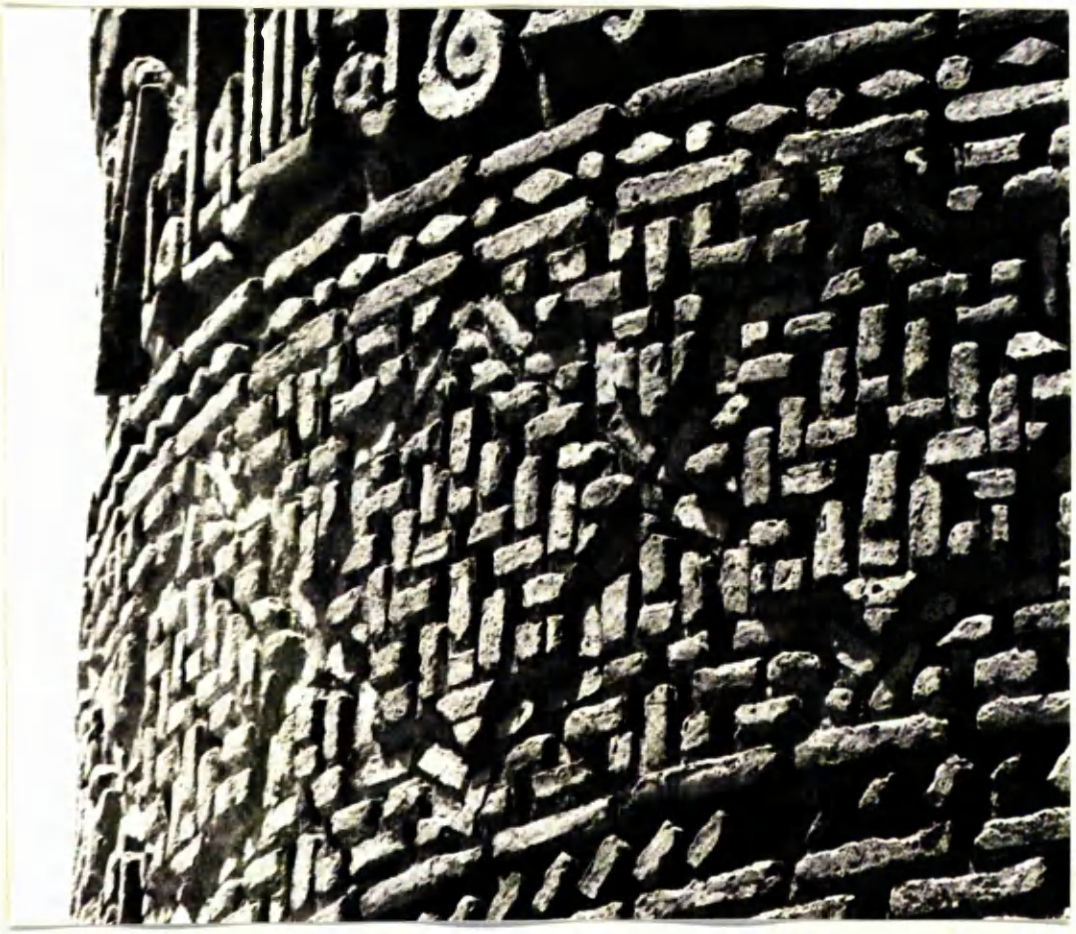


Sāva - Masjid-i Maydān



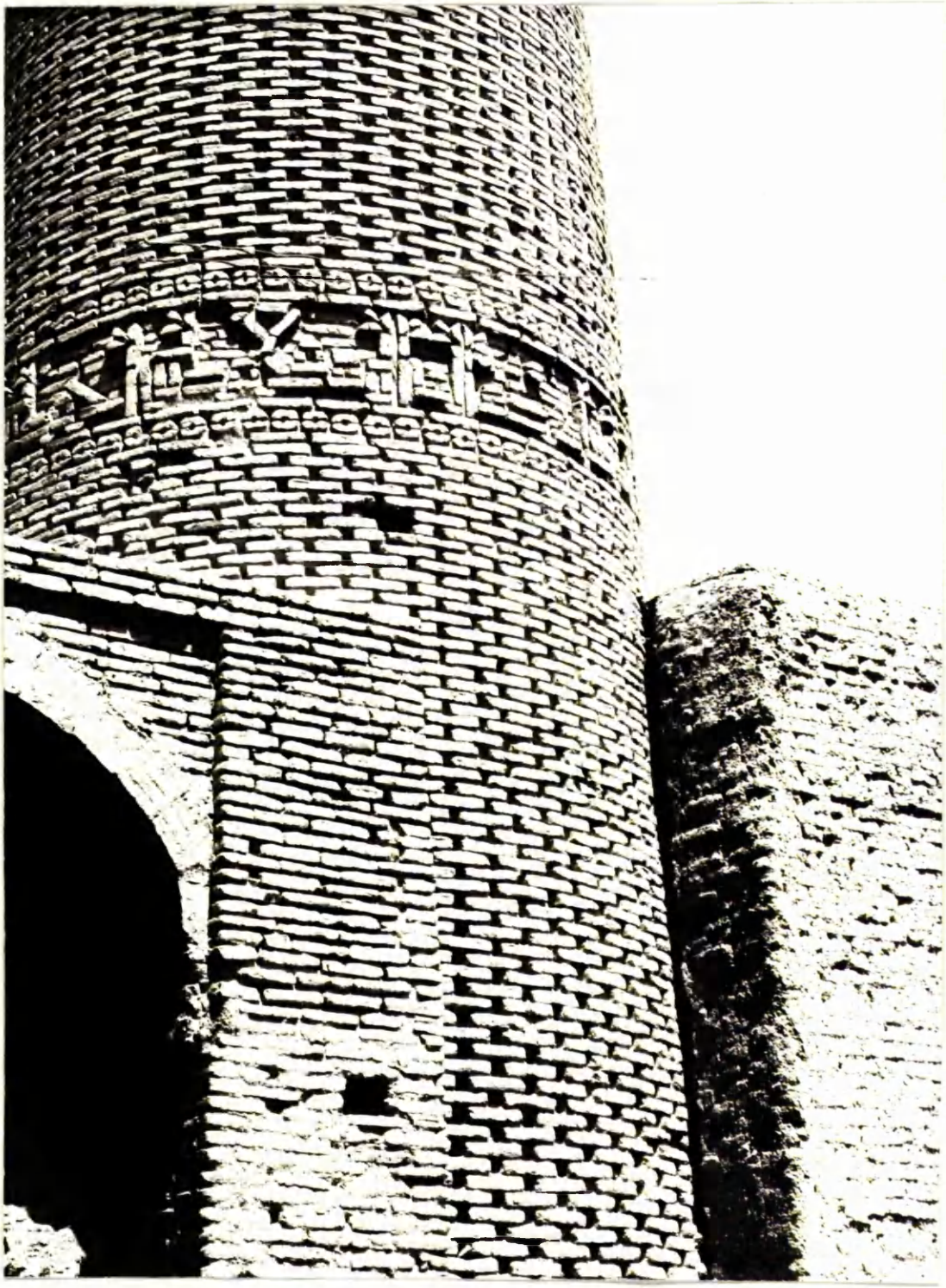
Sāva - Masjid-i Maydān

Sāva - Masjid-i Maydān. Minaret inscription



Sāva - Masjid-i Maydān. Minaret pattern

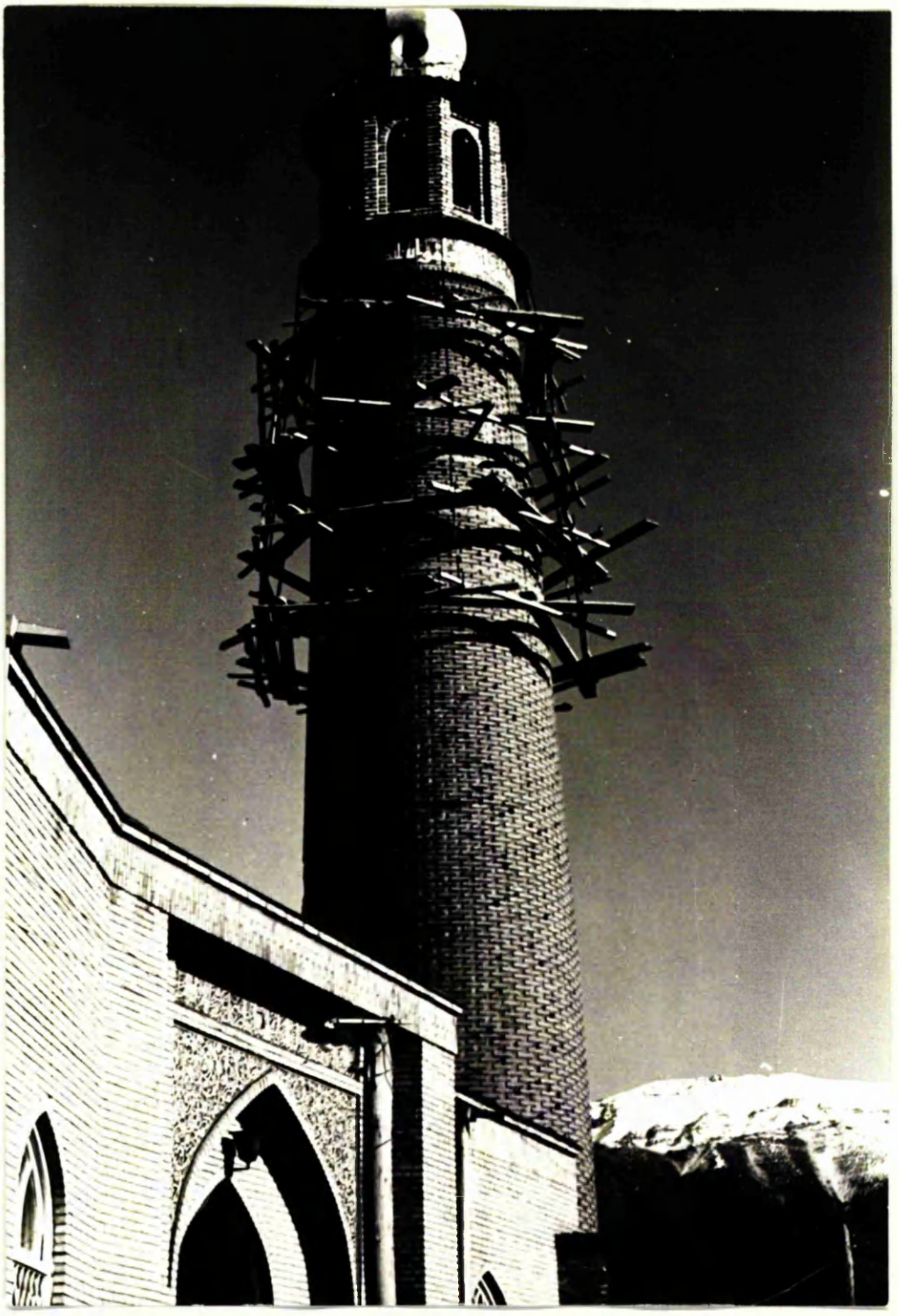
Zavara - Masjid-i Pāmanār



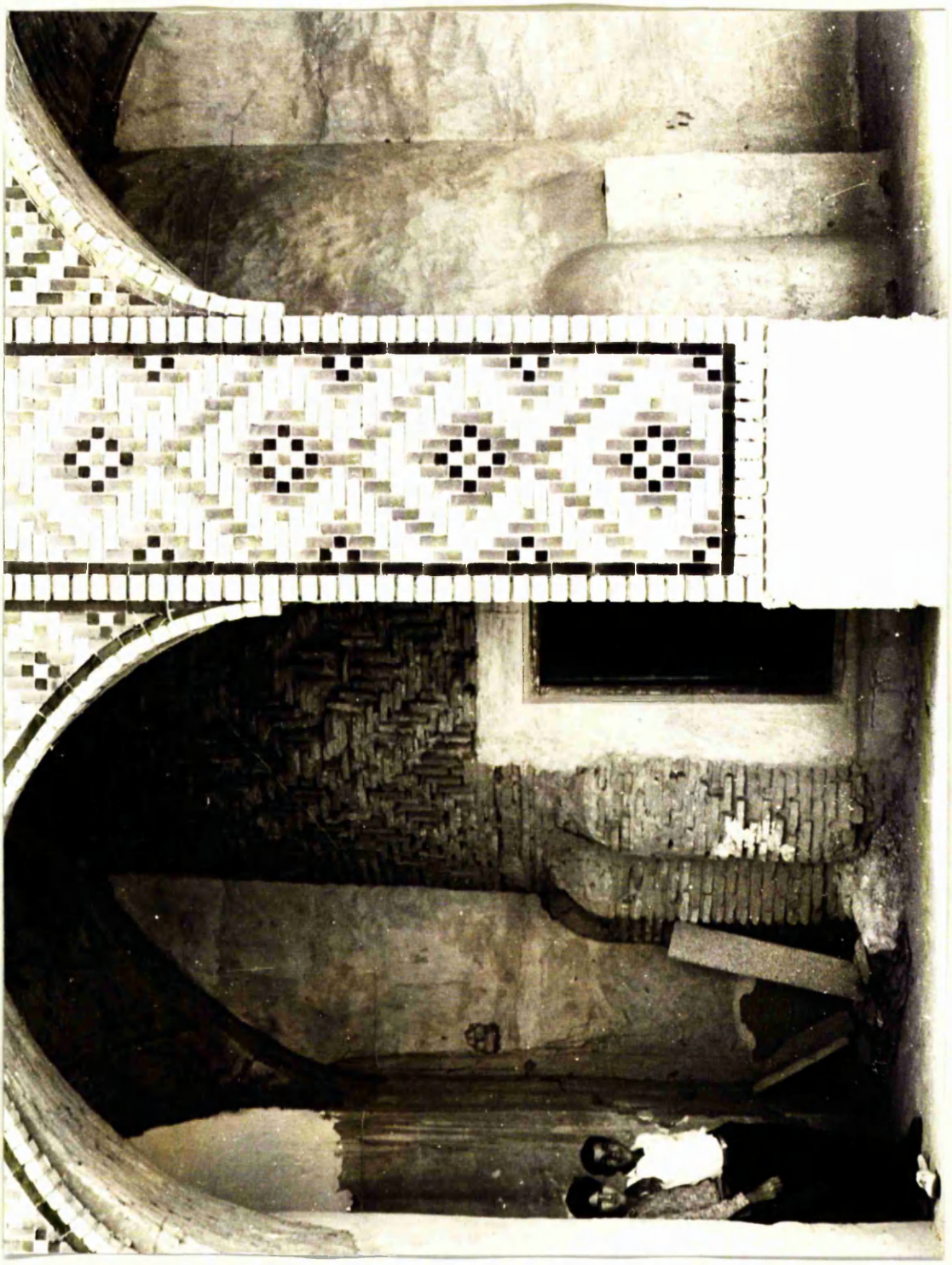
Zavara - Masjid-i Pāmanār

Zavara - Masjid-i Pāmanār. Inscription

Zavara - Masjid-i Pāmanār. Inscription

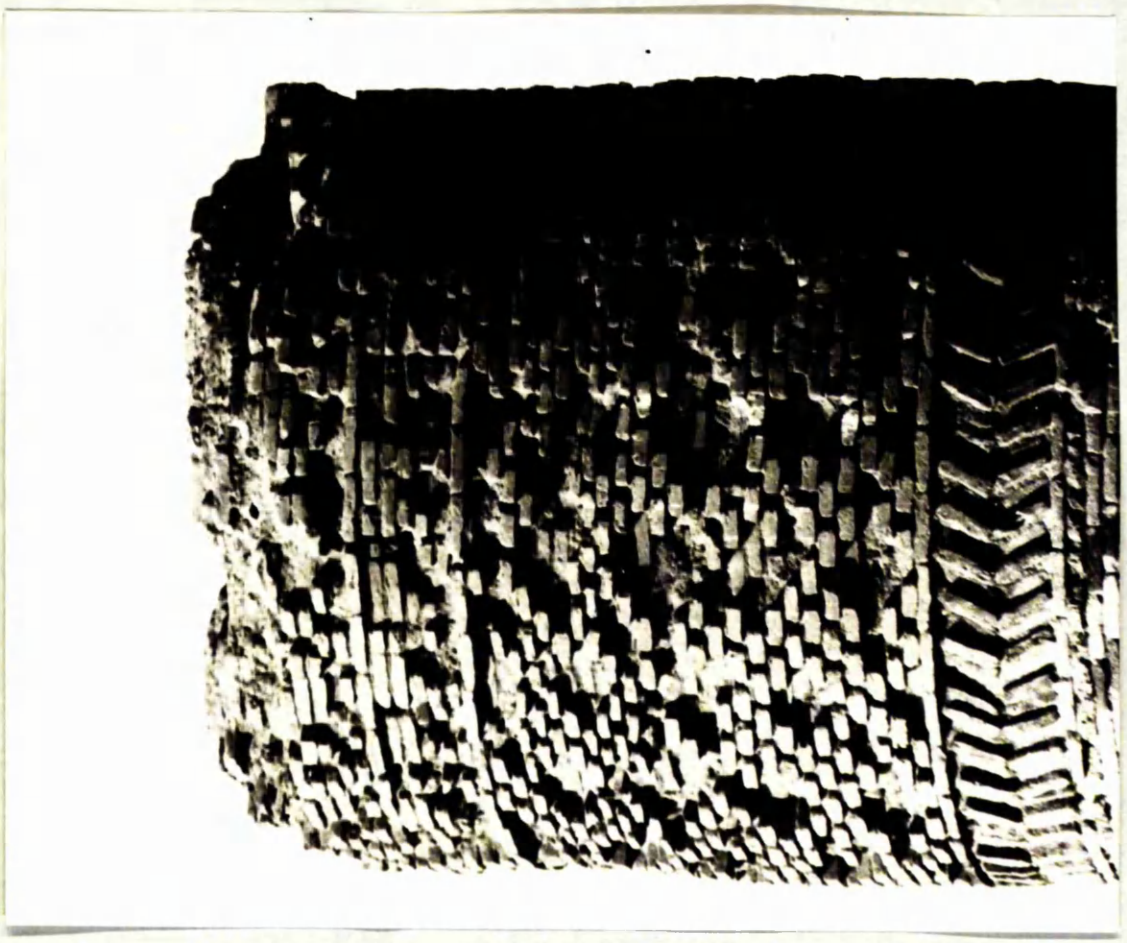


Damāvand - Masjid-i Jāmi'

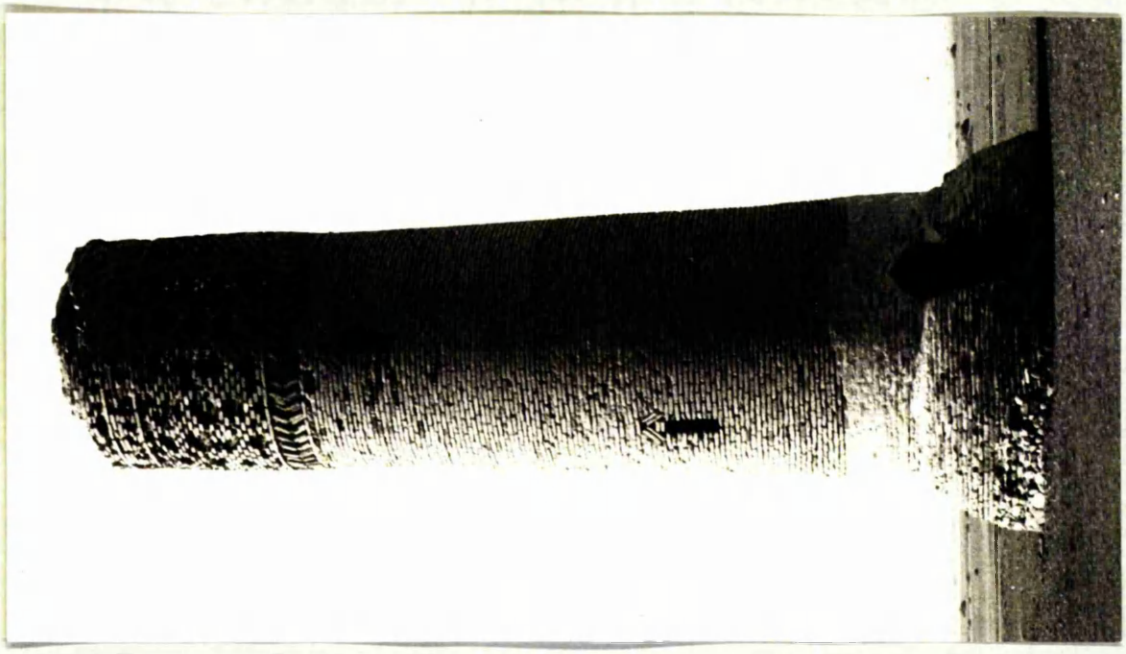


Zarand - Masjid-i Jāmi'

Zarand - Masjid-i Jāmi

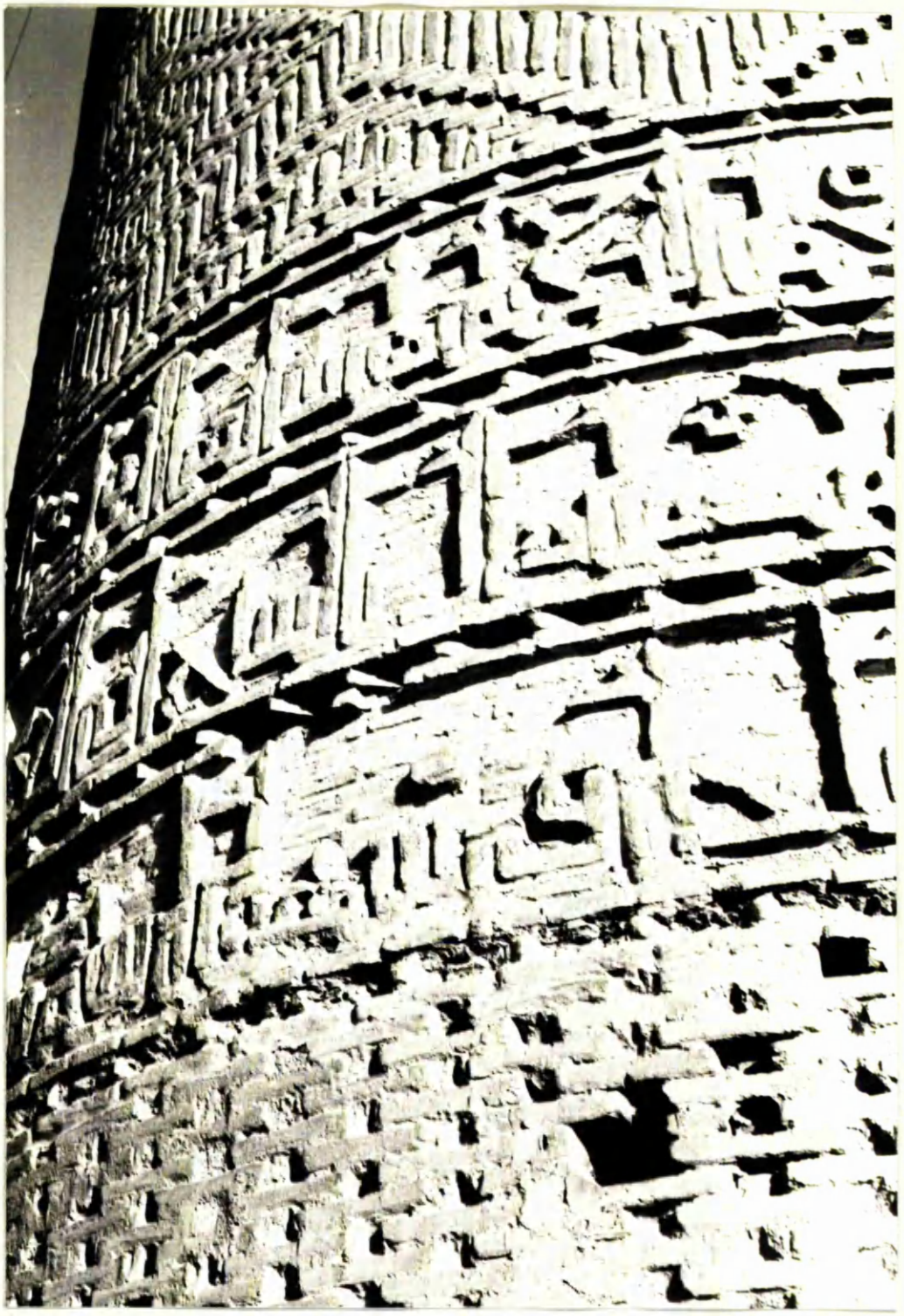


Mīl-i Nādirī



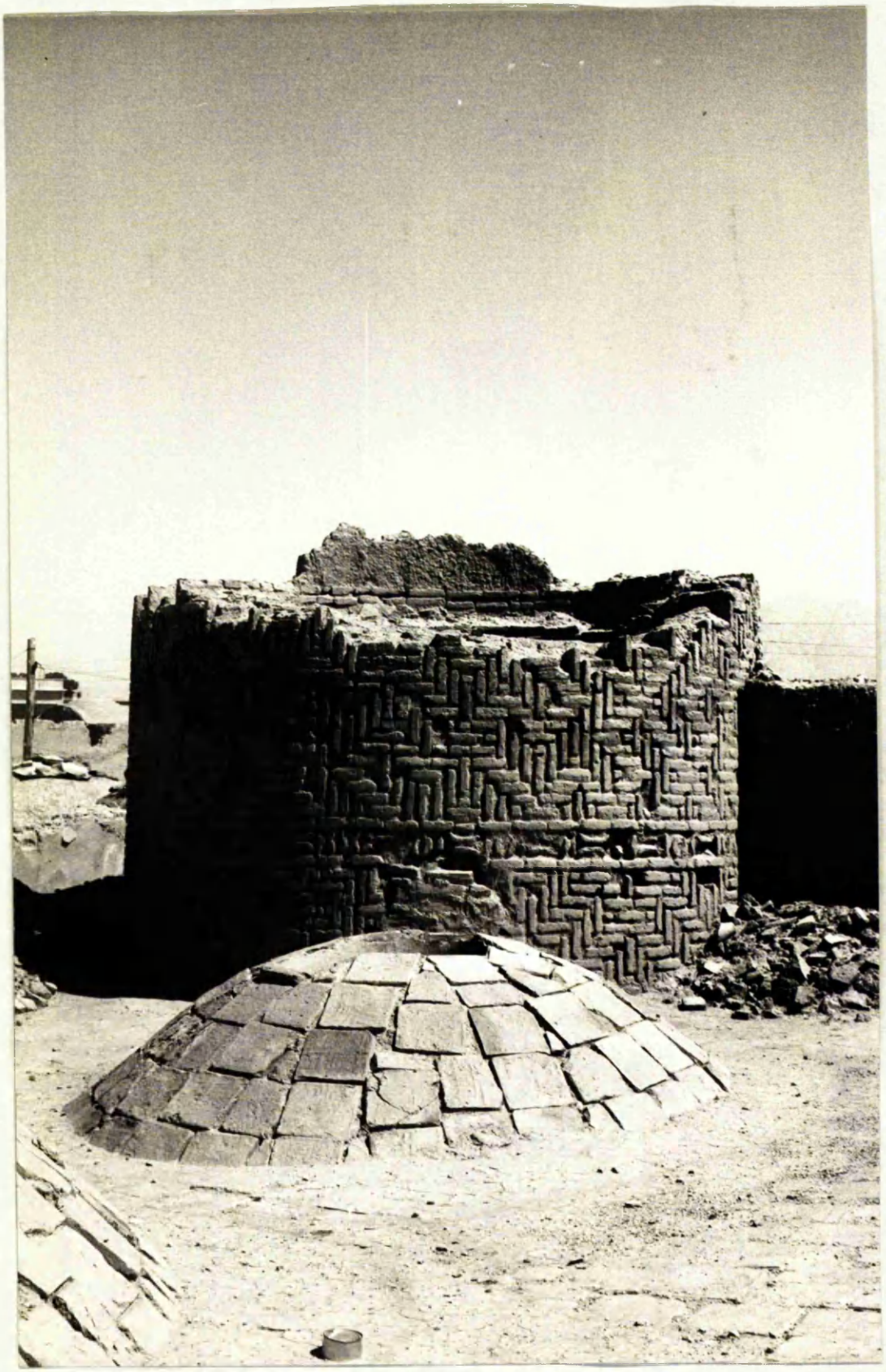
Mīl-i Nādirī

Kāshān - Masjid-i Jāmi'



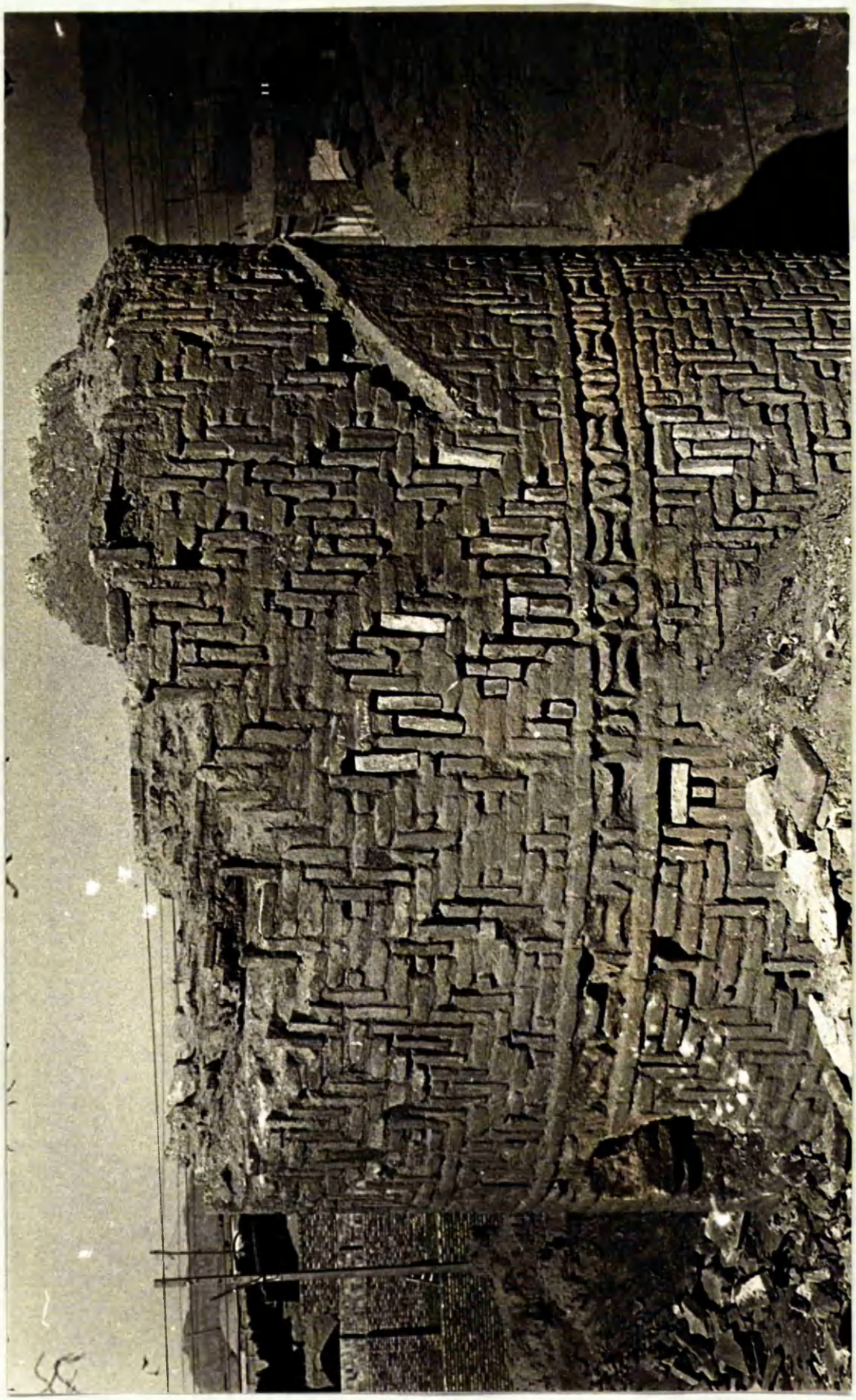
Kāshān - Masjid-i Jāmi'

Kirmān – Masjid-i Malik. Minaret before clearance



Kirmān - Masjid-i Malik. Minaret before clearance

Kirmān - Masjid-i Malik. Minaret after clearance

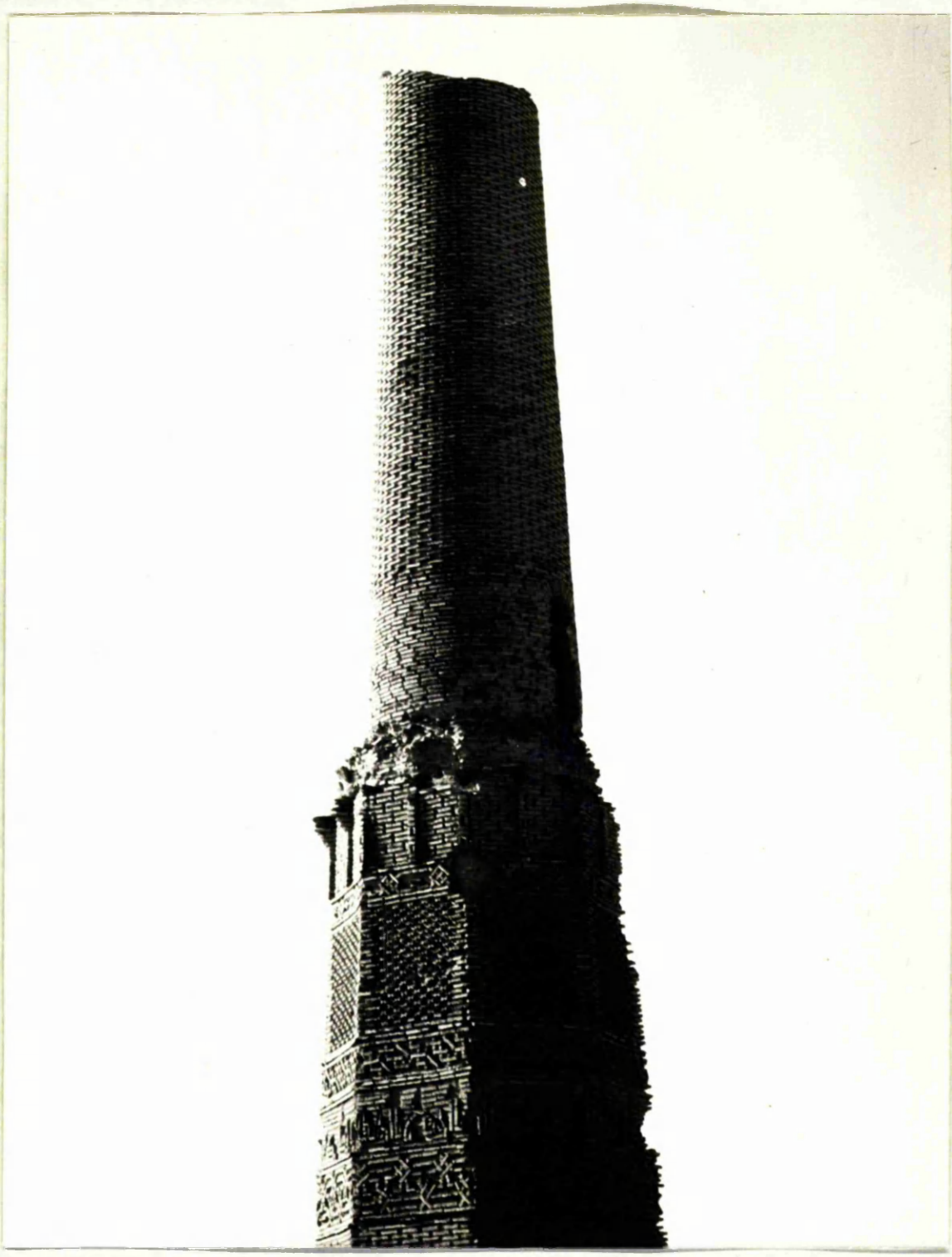


Kirmān - Masjid-i Malik. Minaret after clearance

Kirmān - Masjid-i Malik. Minaret pattern detail

Kirmān – Masjid-i Malik. Minaret base

Kirāt



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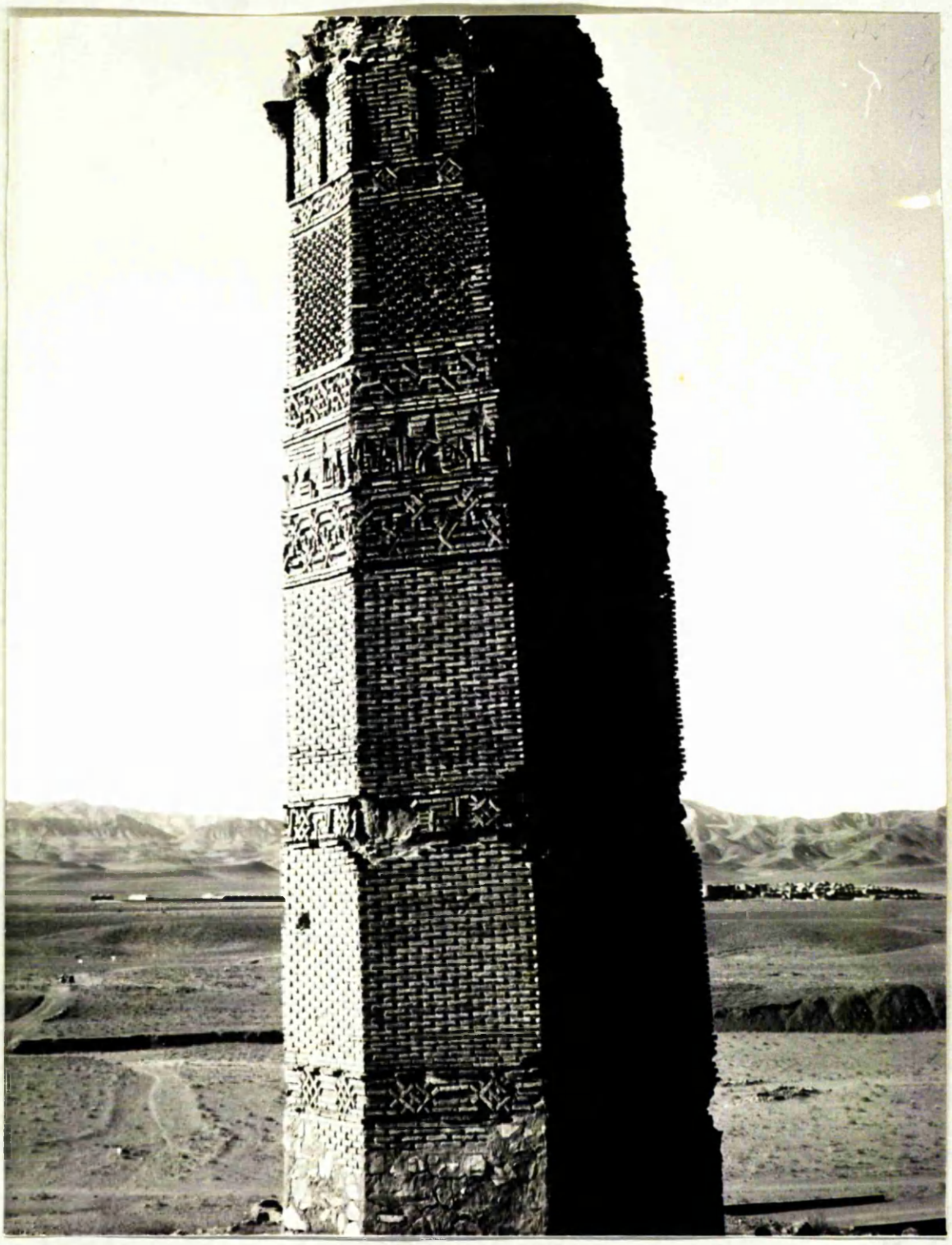

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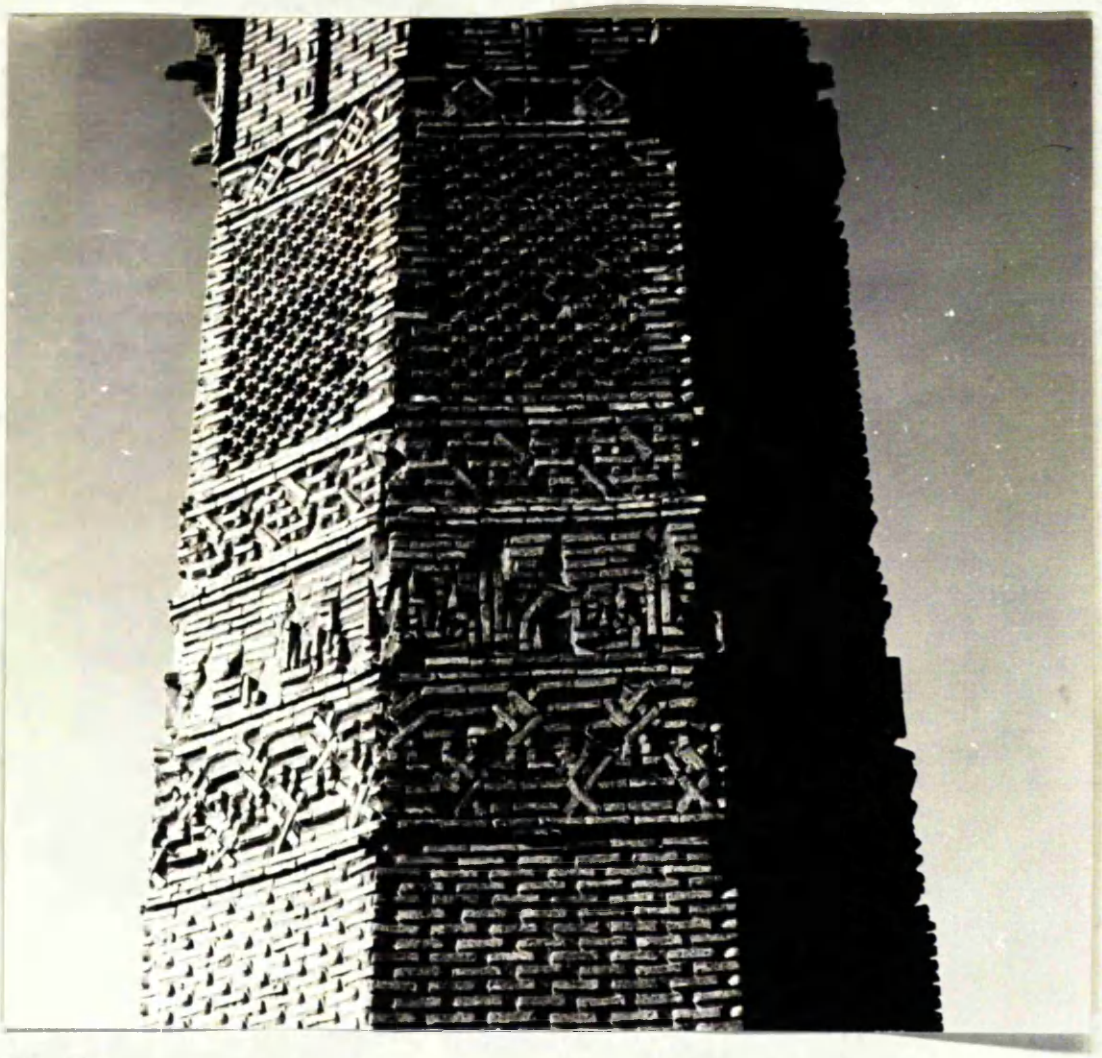

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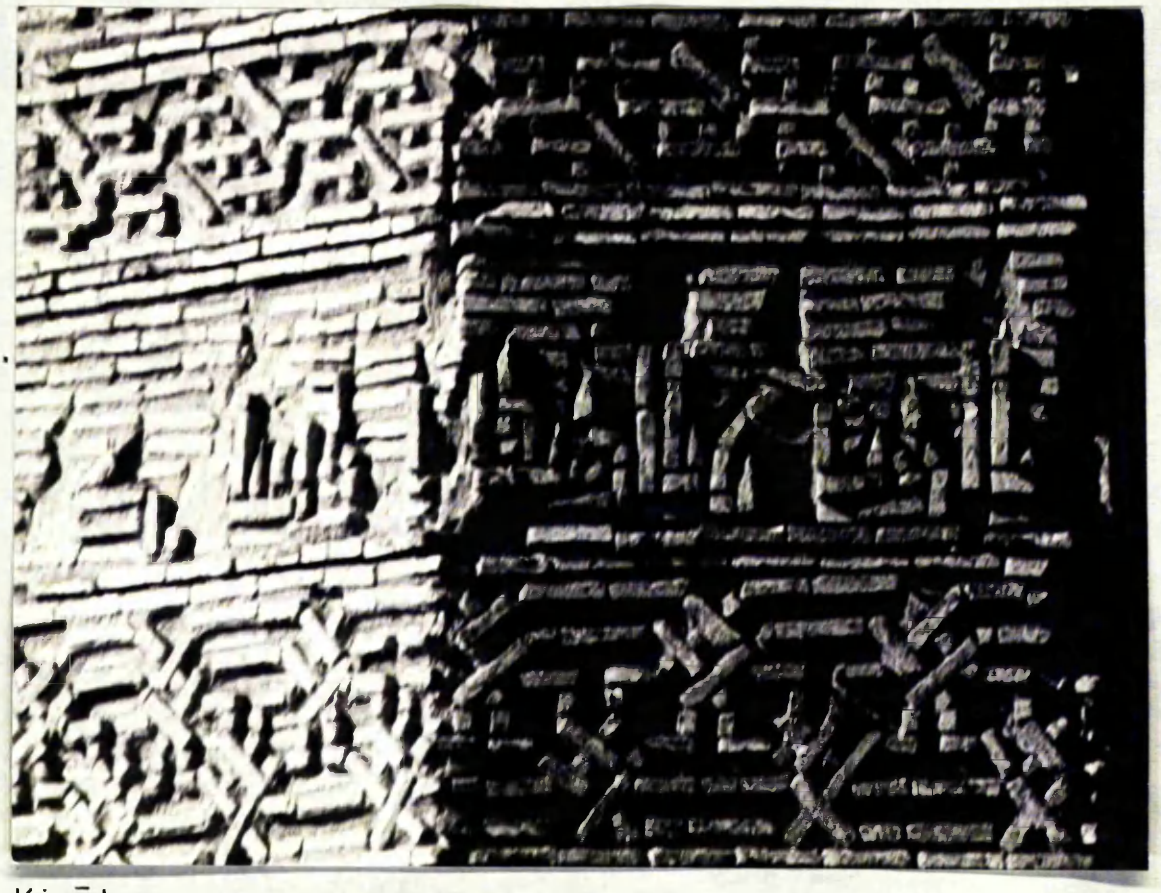

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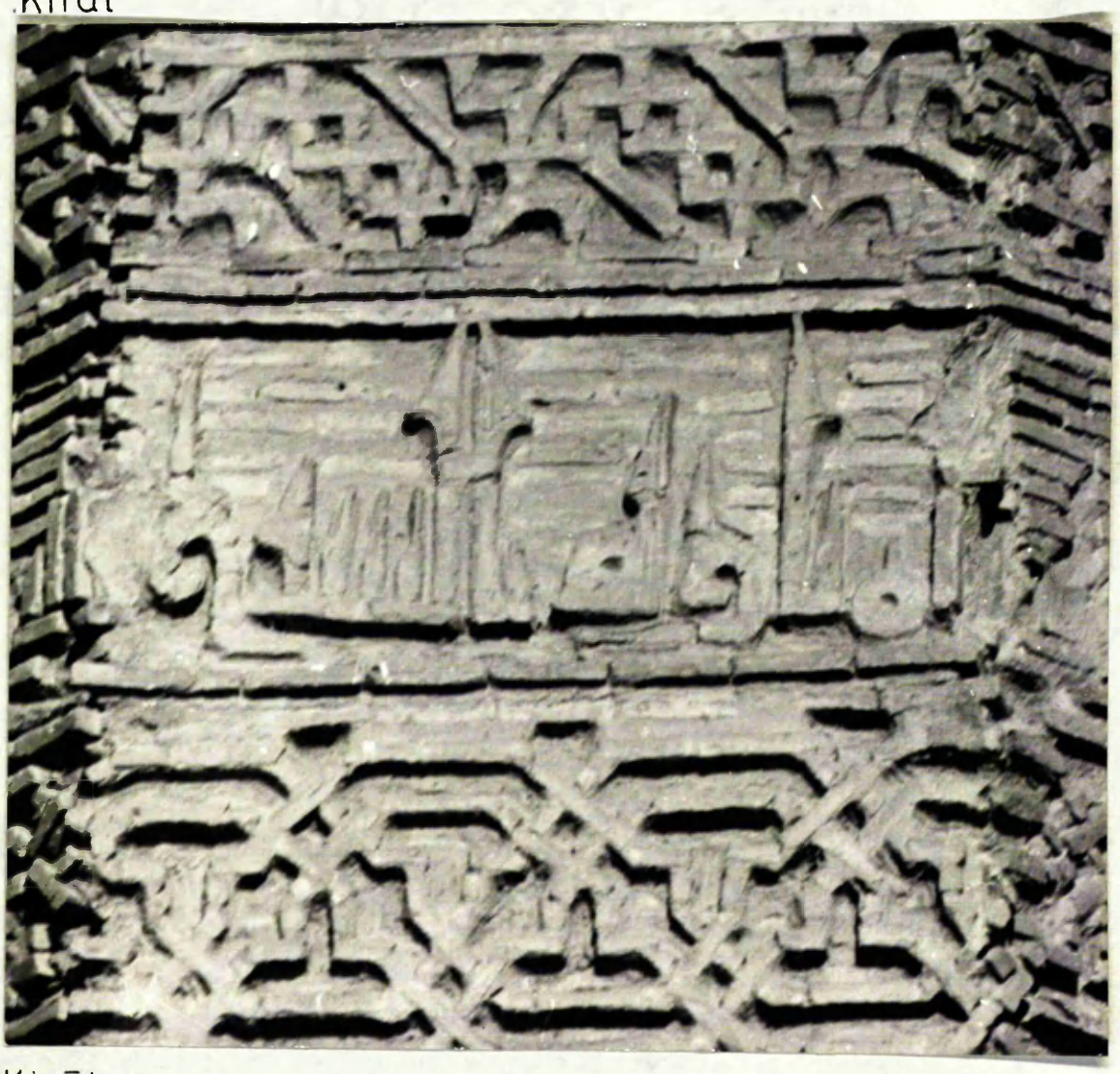

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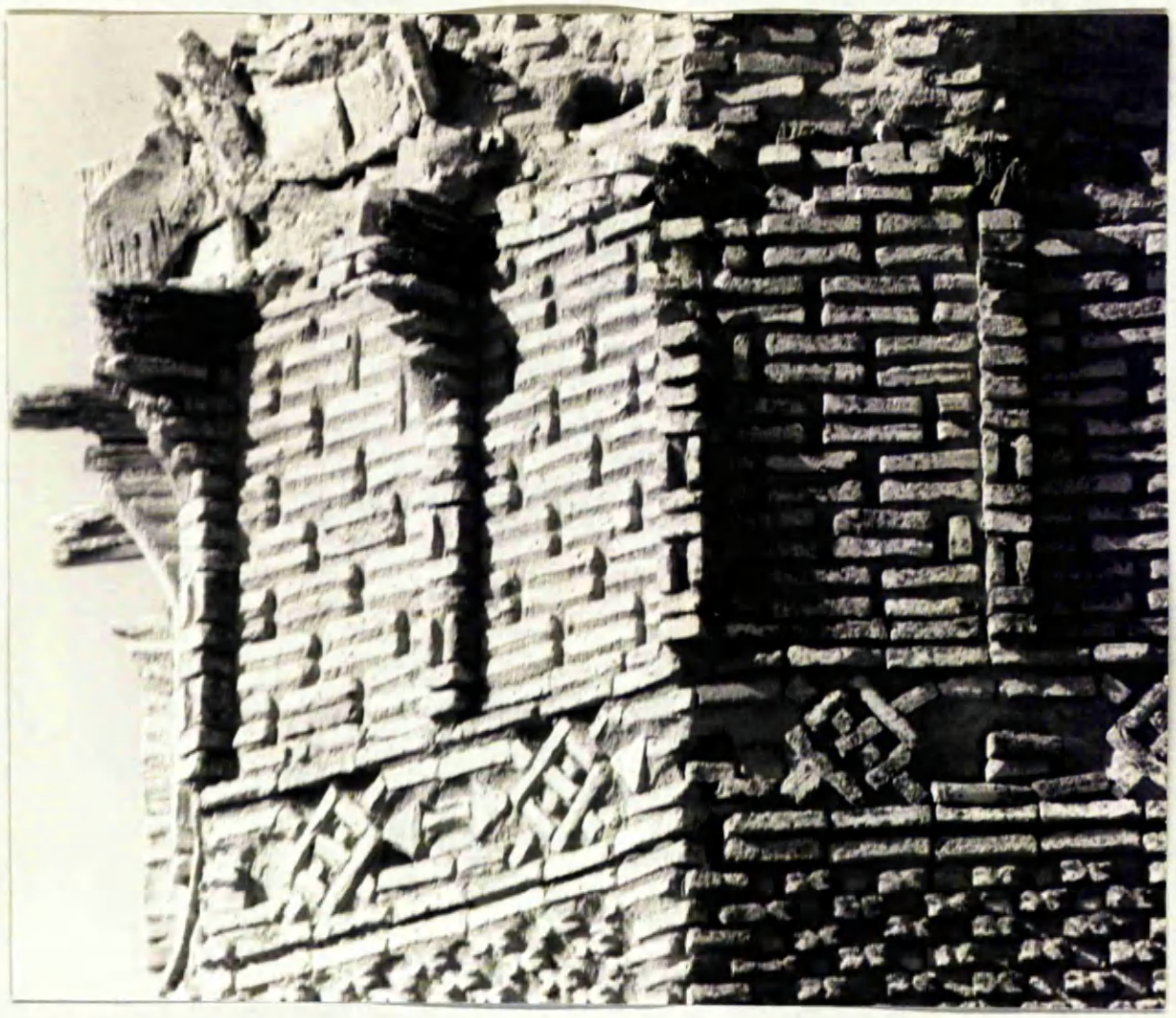

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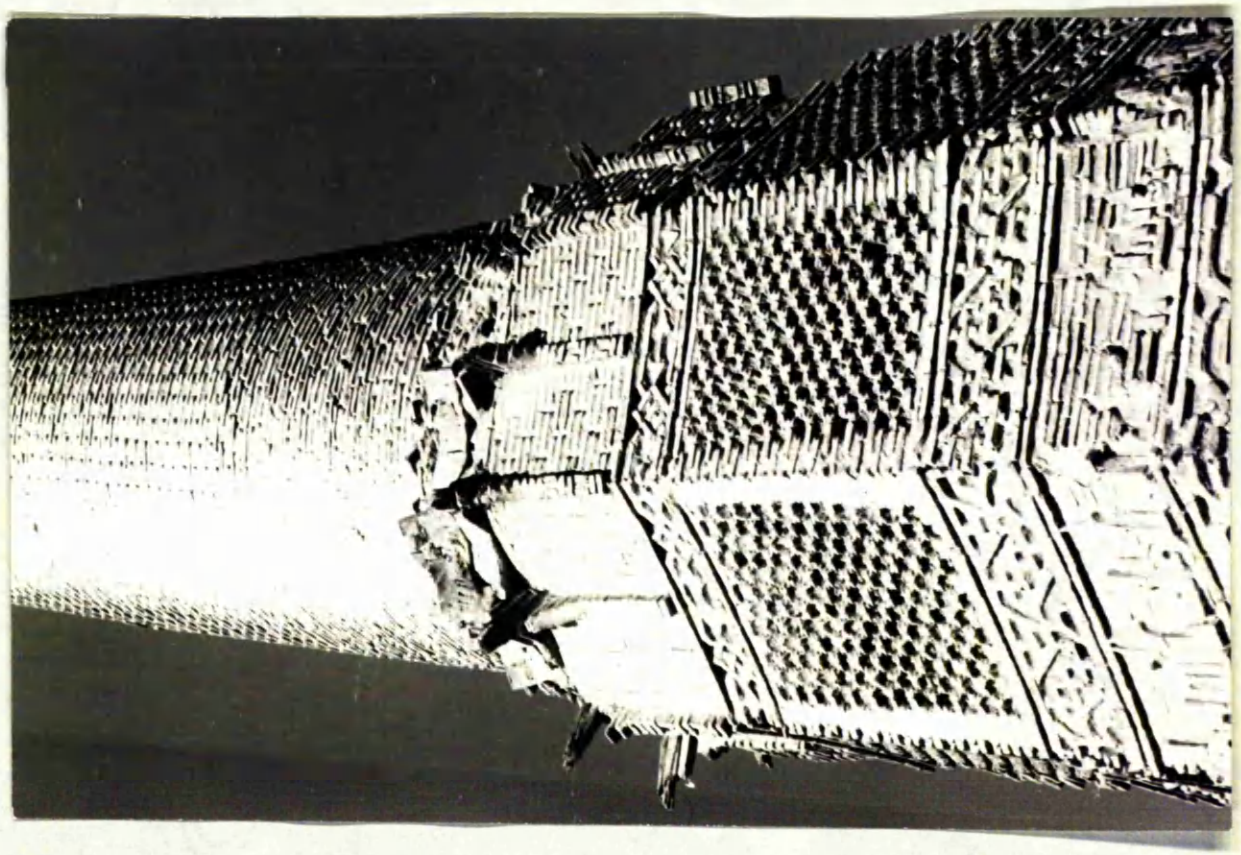
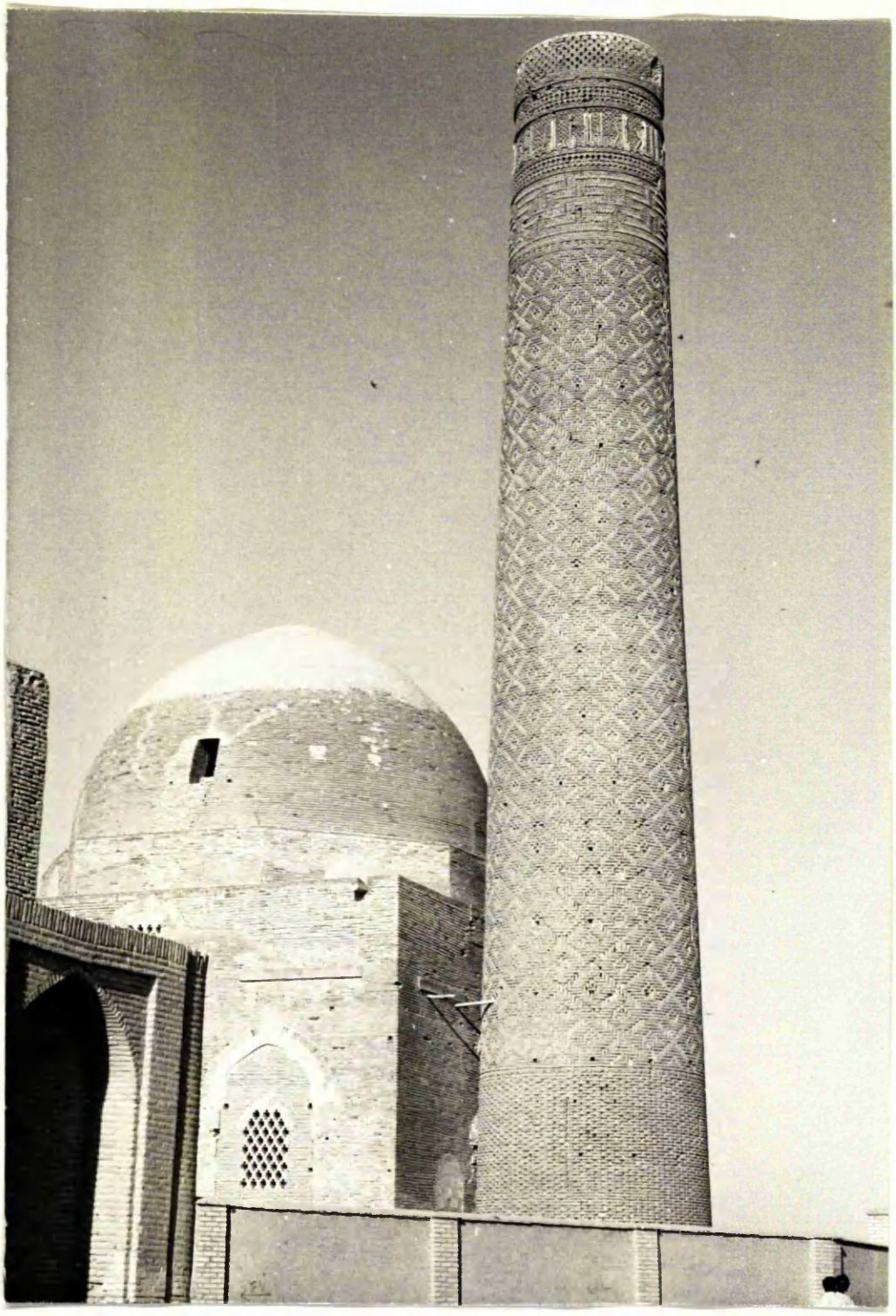


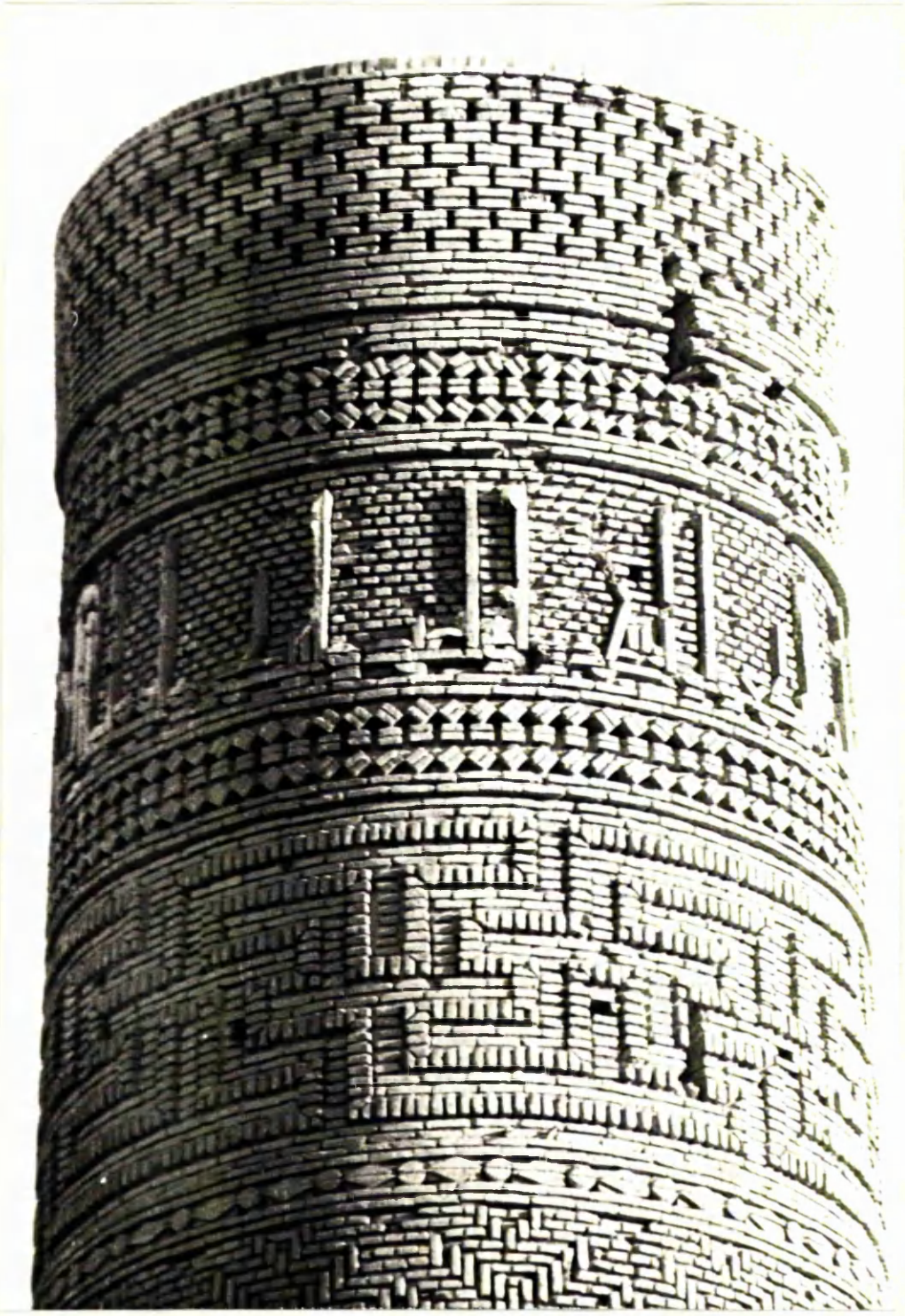
Kirāt

Ardabīl - Masjid-i Jāmi'

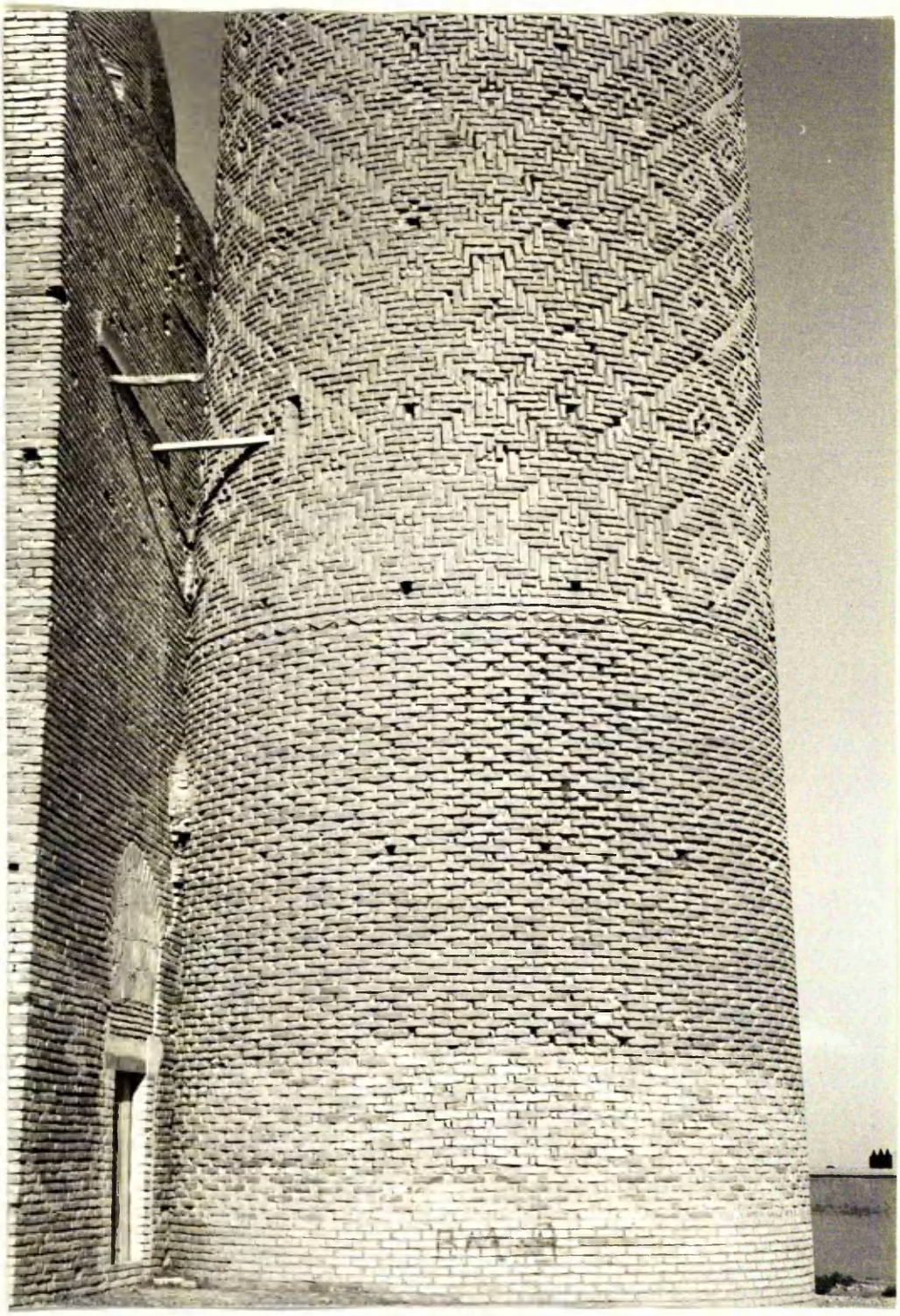
'Alā



Barsiān - Masjid-i Jāmi'



Barsiān - Masjid-i Jāmi'. Inscription

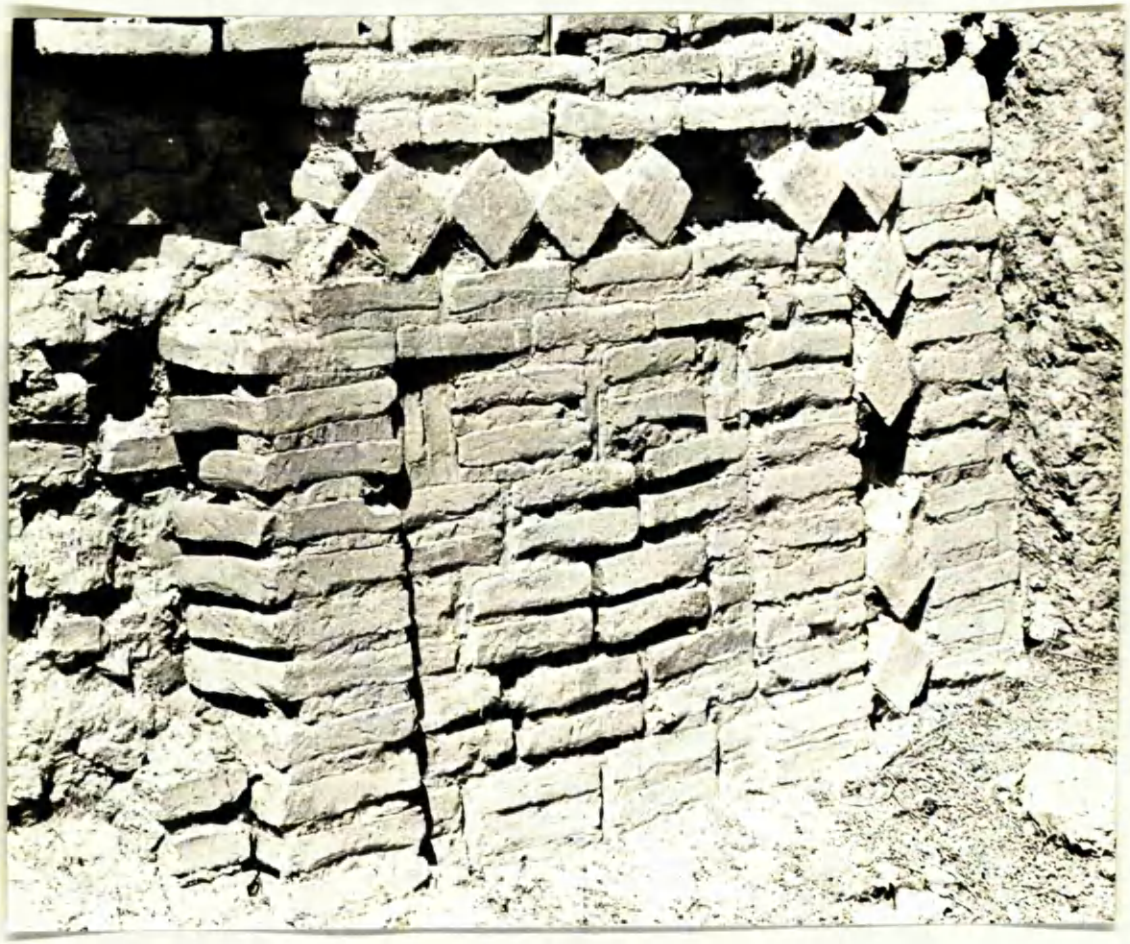


Barsiān - Masjid-i Jāmi'. Minaret base

Varzana - Masjid-i Jāmi'

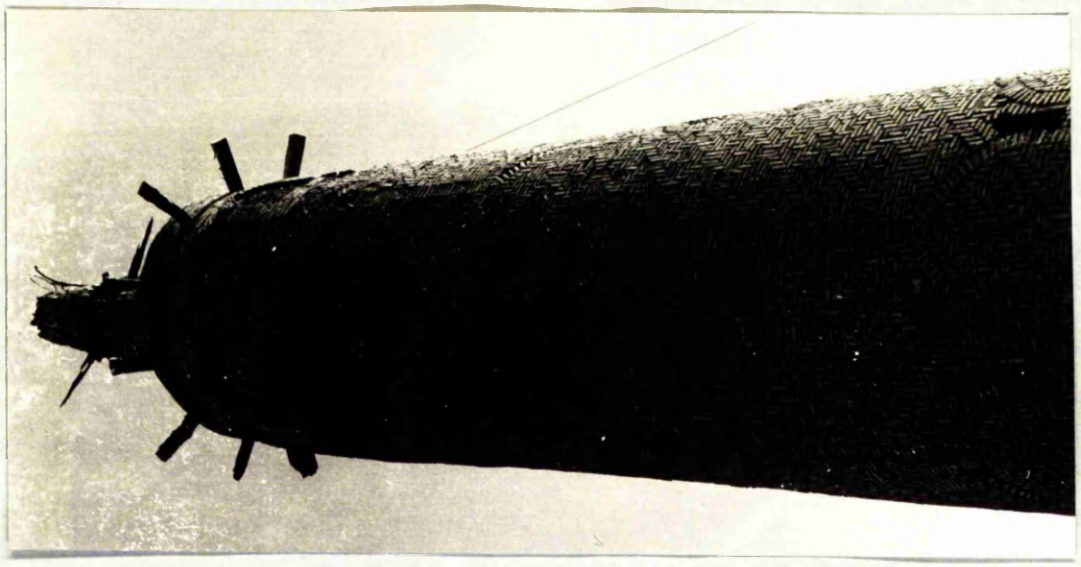
Varzana - Masjid-i Jāmi'

Varzana - Masjid-i Jāmi'. Minaret detail



Varzana - Masjid-i Jāmi'. Minaret base

Gulpāyagān

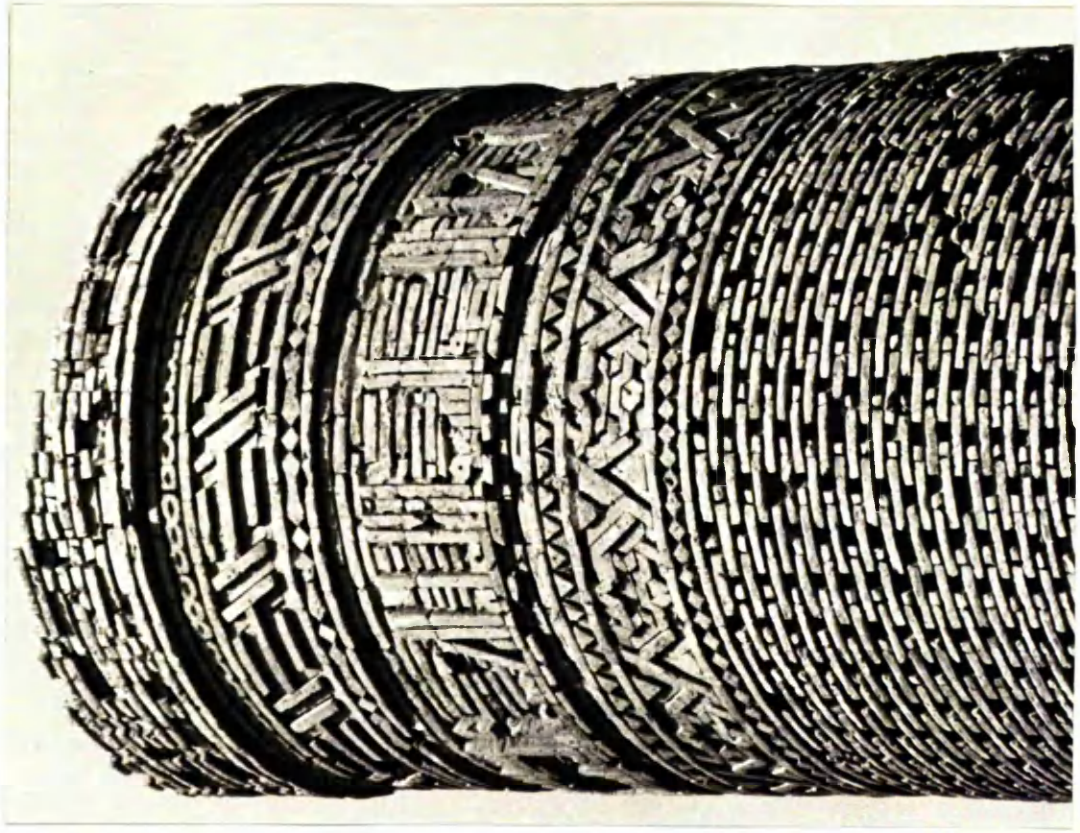


Gulpāyagān

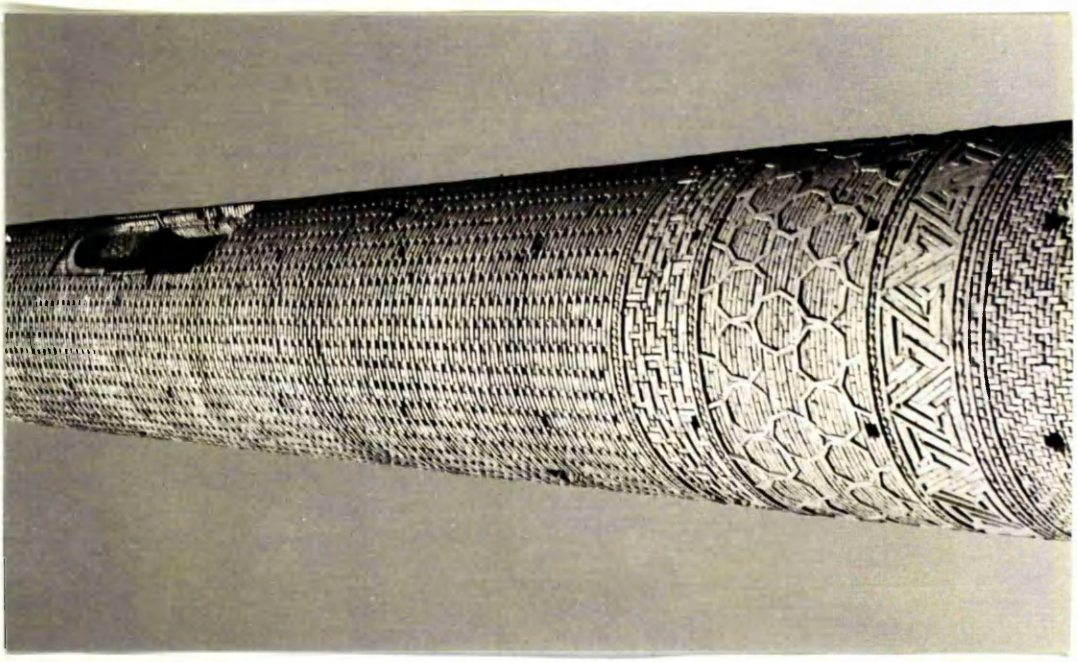
Gulpāyagān

Gulpāyagān. Details of minaret base

Isfahan - Chihil Dukhtarān

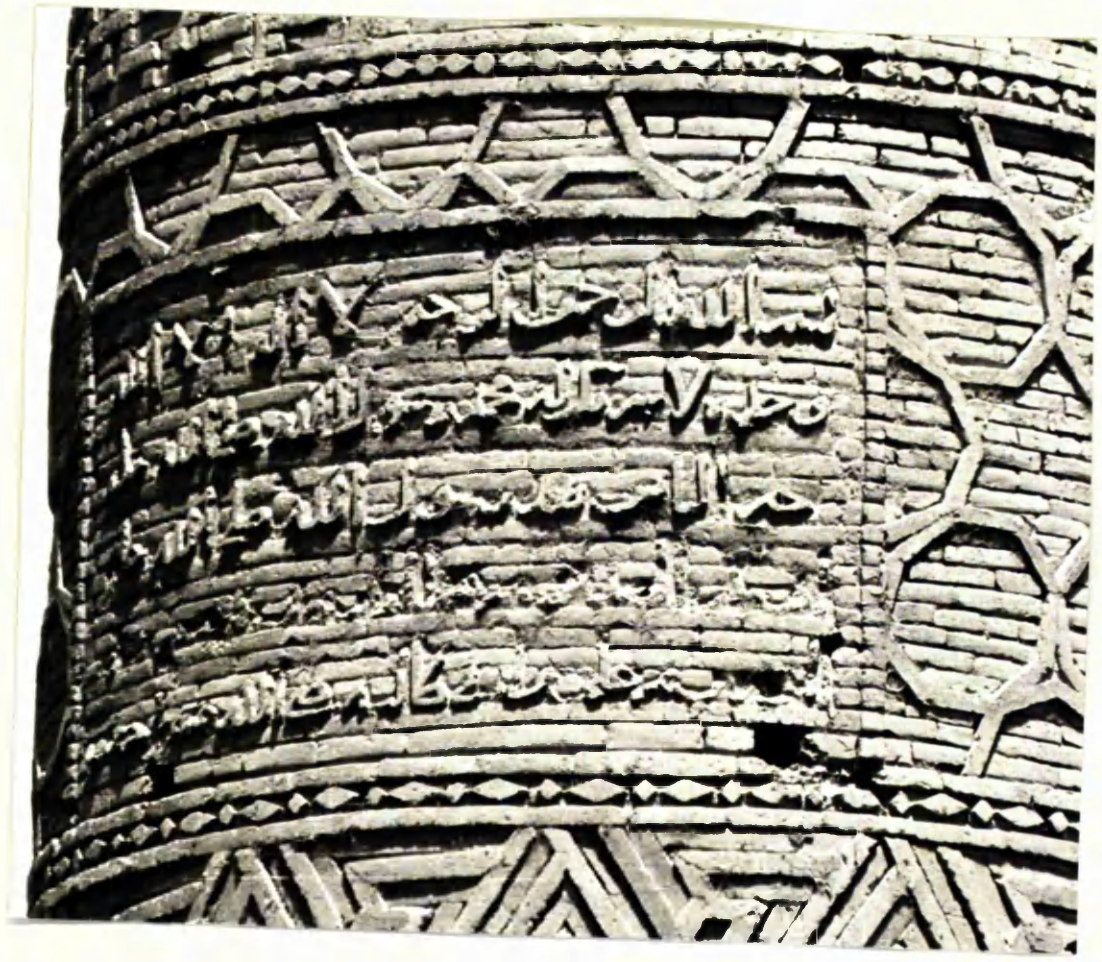


Isfahan - Chihil Dukhtarān

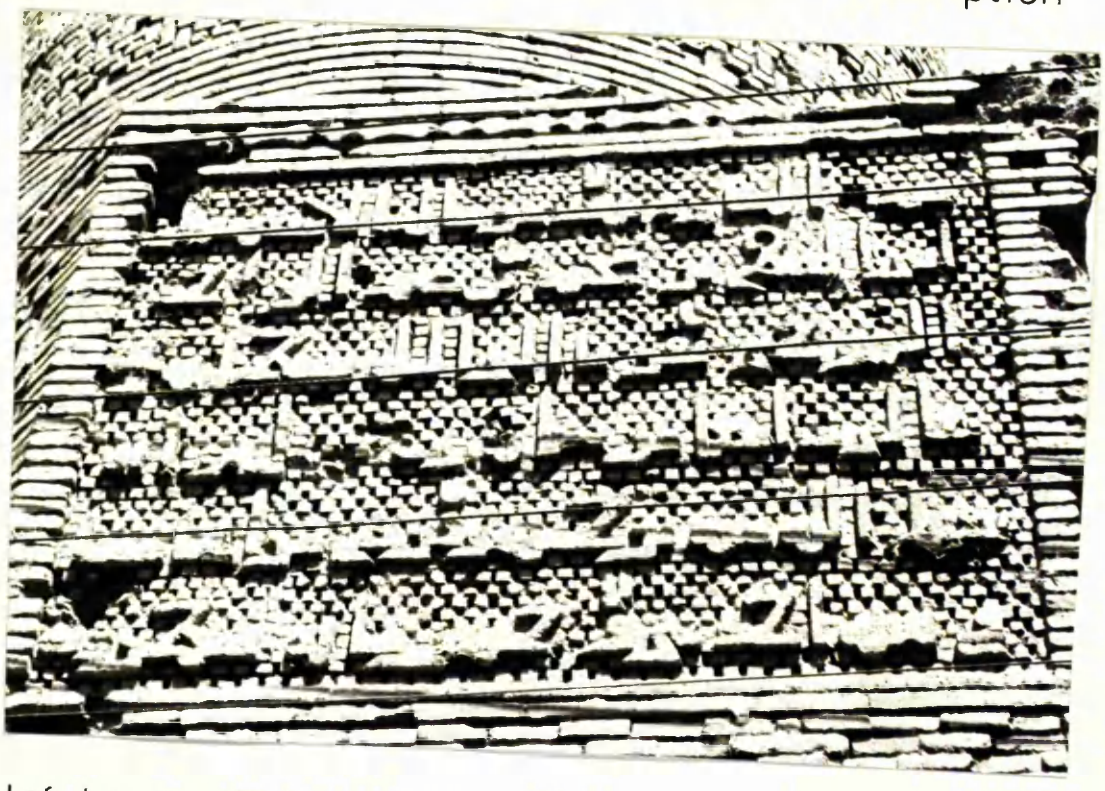


Isfahan - Chihil Dukhtarān

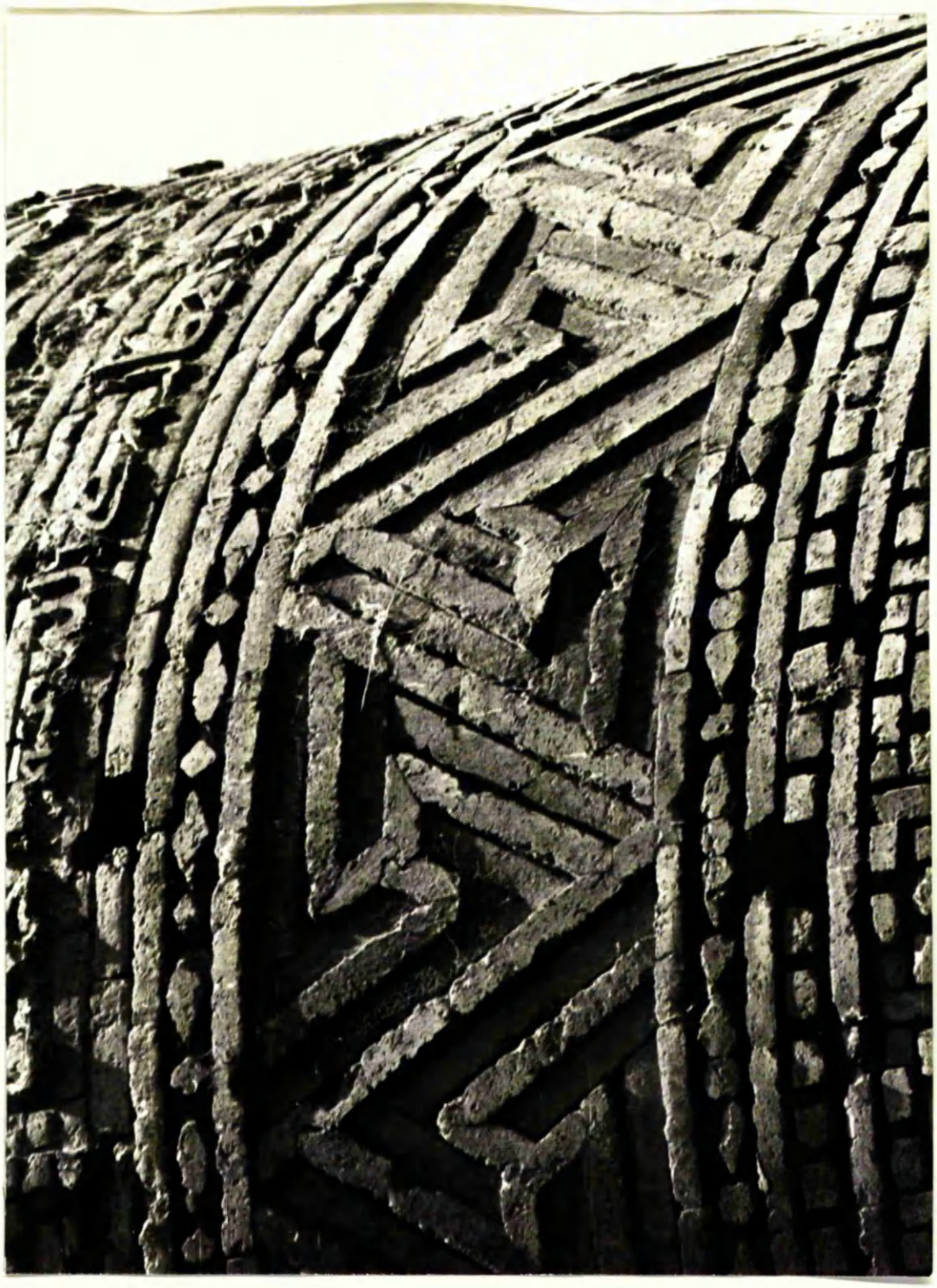
Isfahan - Chihil Dukhtarān



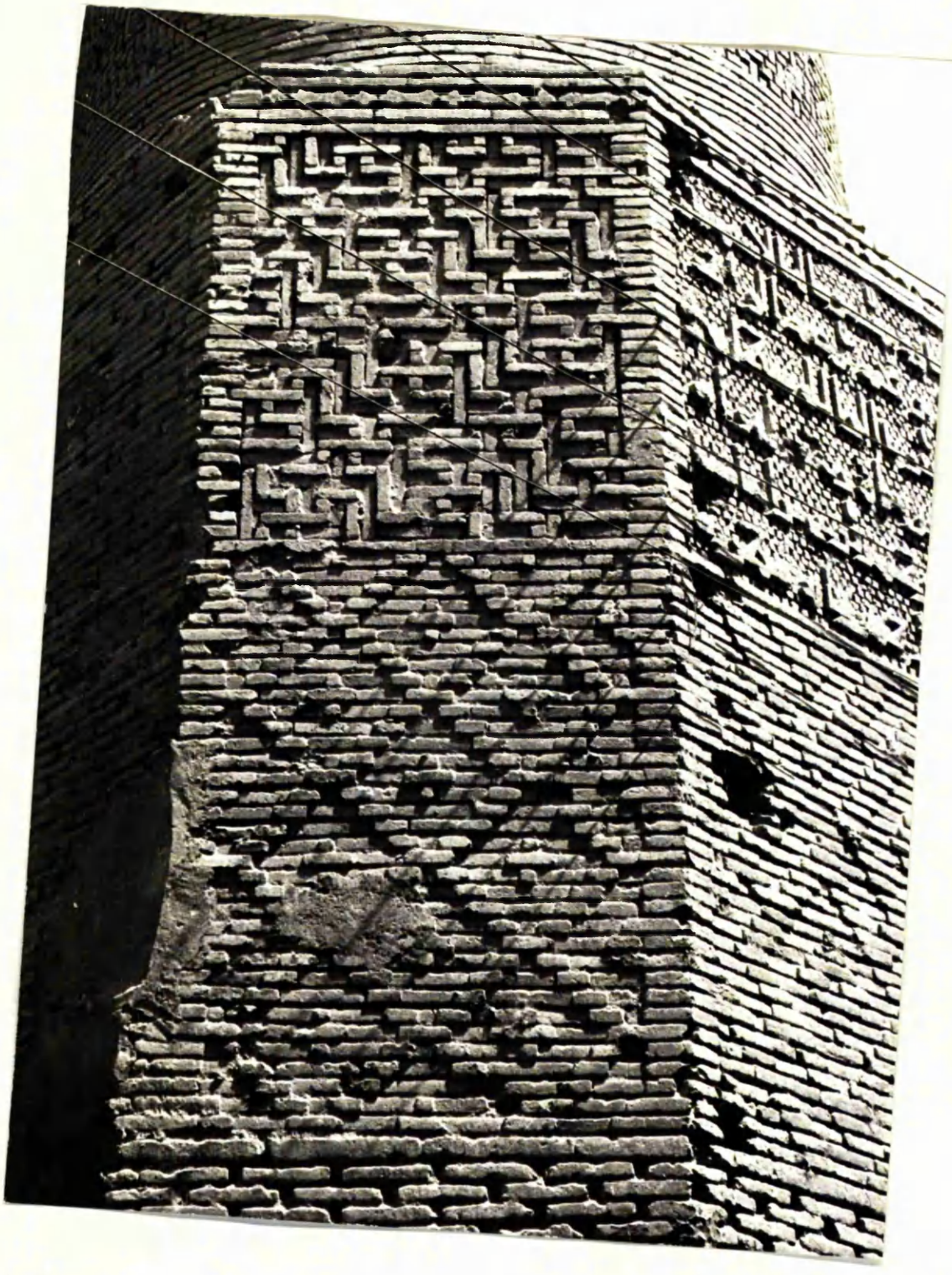
Isfahan - Chihil Dukhtarān. Naskhī inscription



Isfahan - Chihil Dukhtarān. Plinth inscription

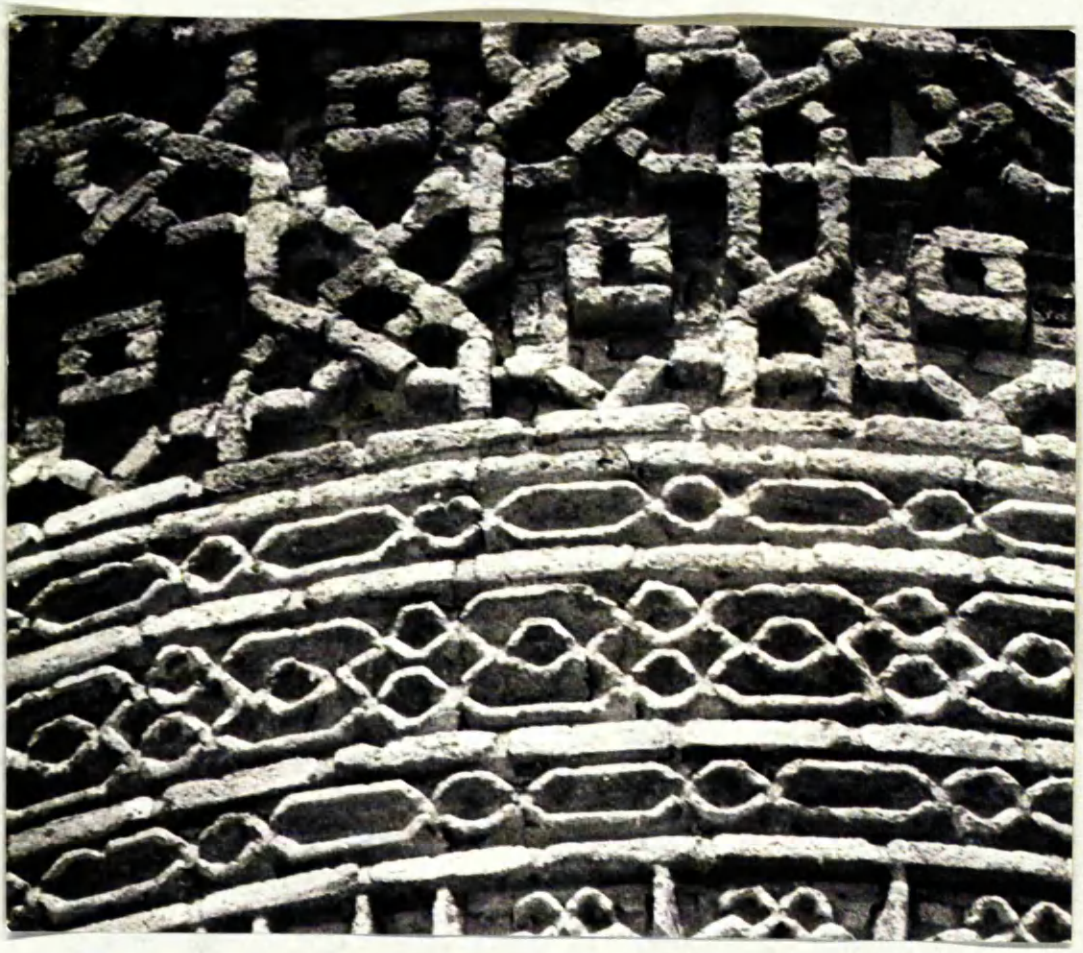


Isfahan - Chihil Dukhtaran. Pattern detail



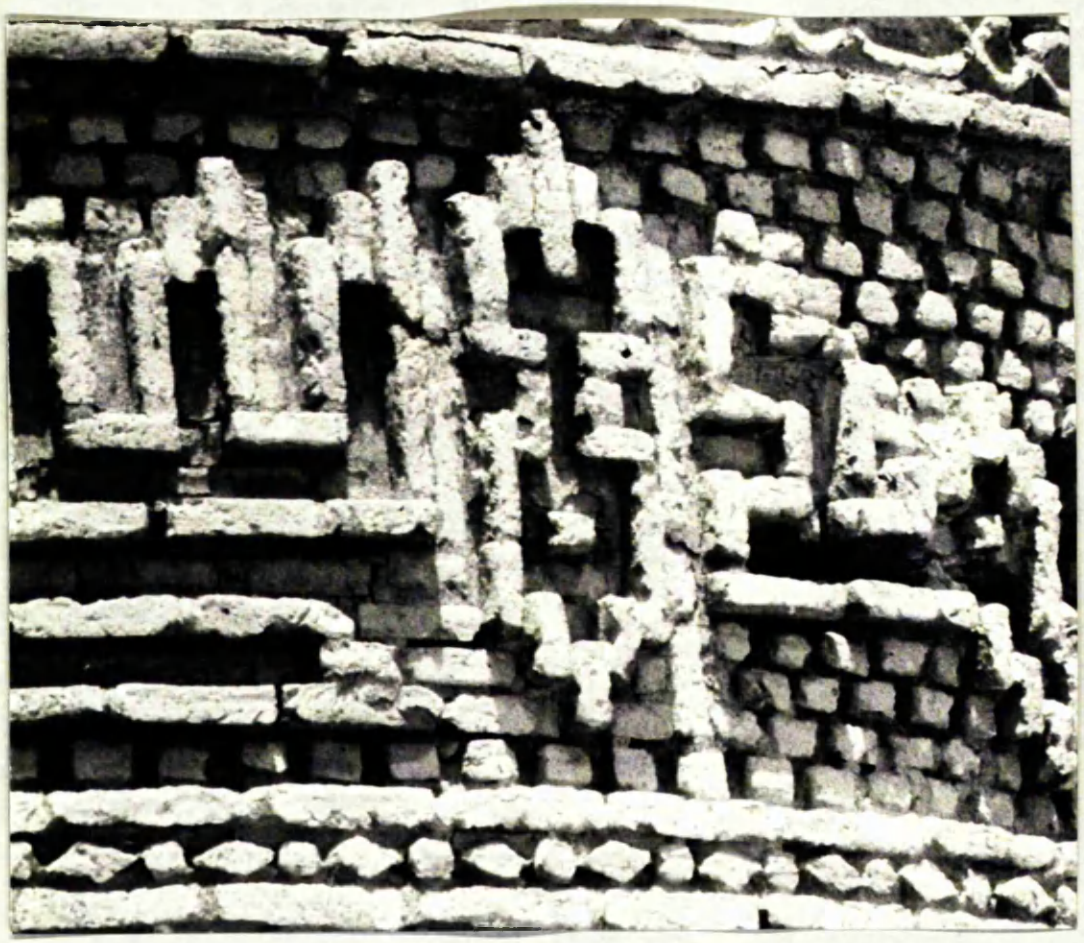
Isfahan - Chihil Dukhtarān. Base patterns

Sāva - Masjid-i Jāmi'

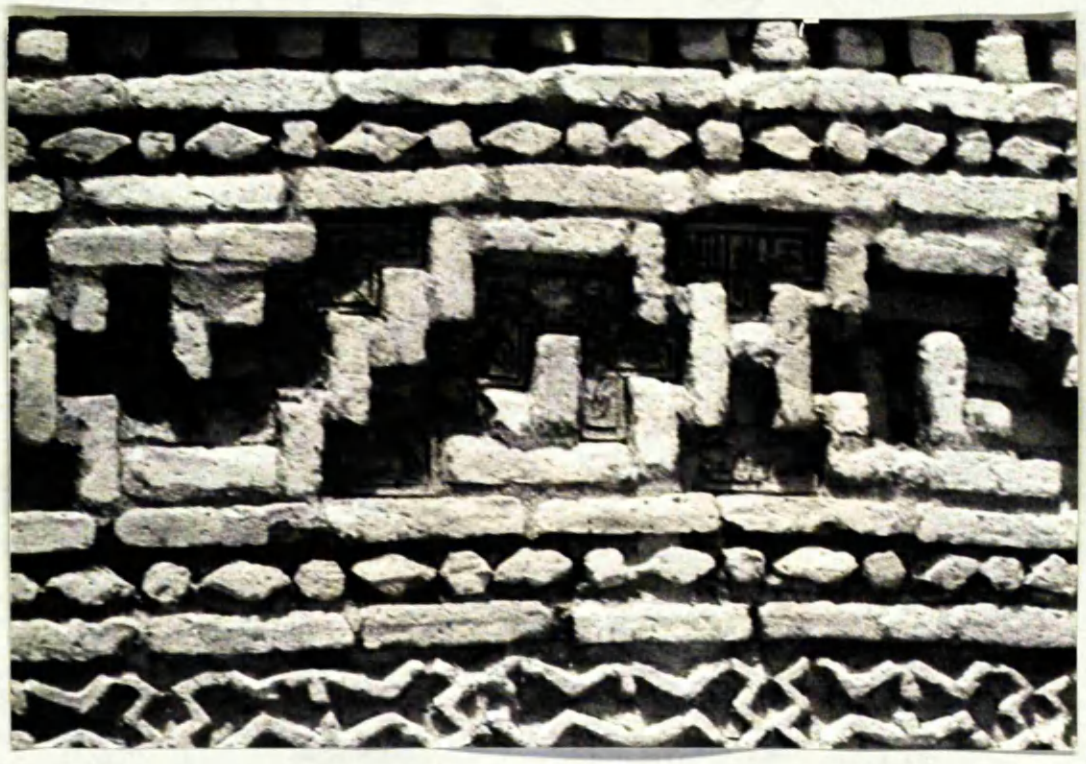


Sava - Masjid-i Jāmi'

Sāva - Masjid-i Jāmi'

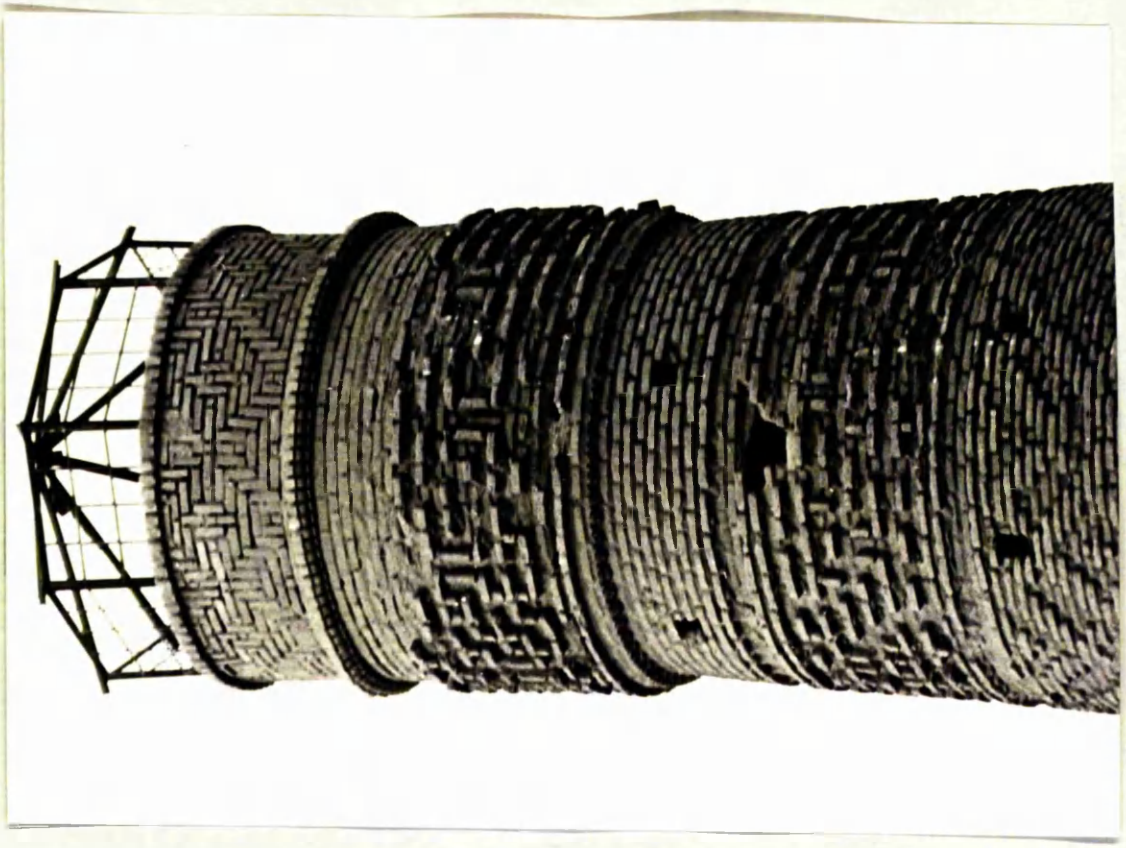


Sava - Masjid-i Jāmi'



Sāva - Masjid-i Jāmi'

Khusrawgird



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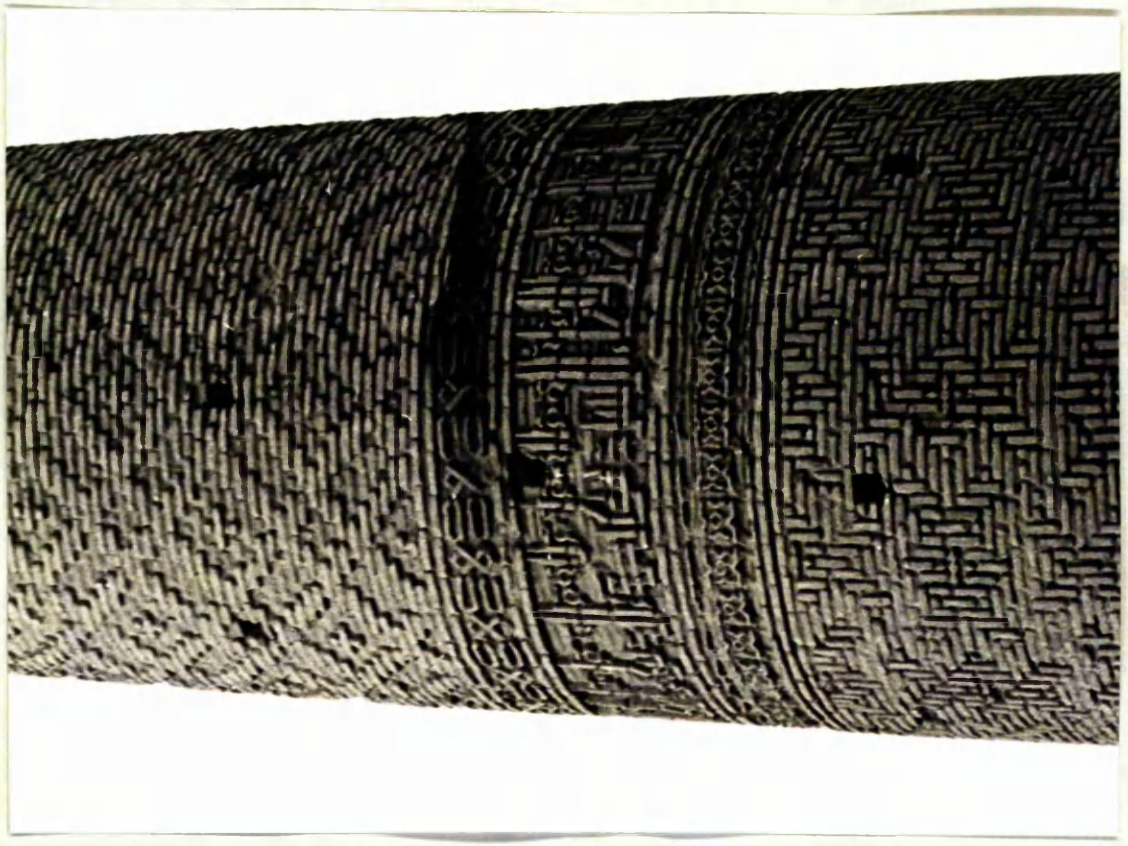

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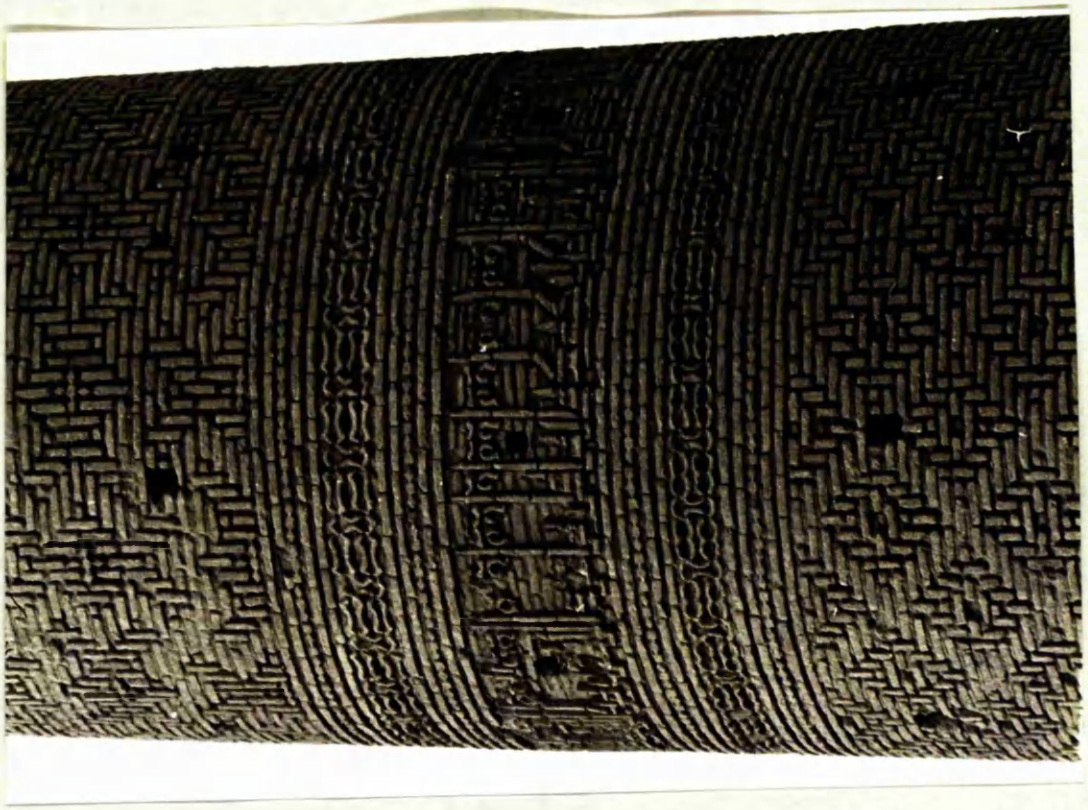

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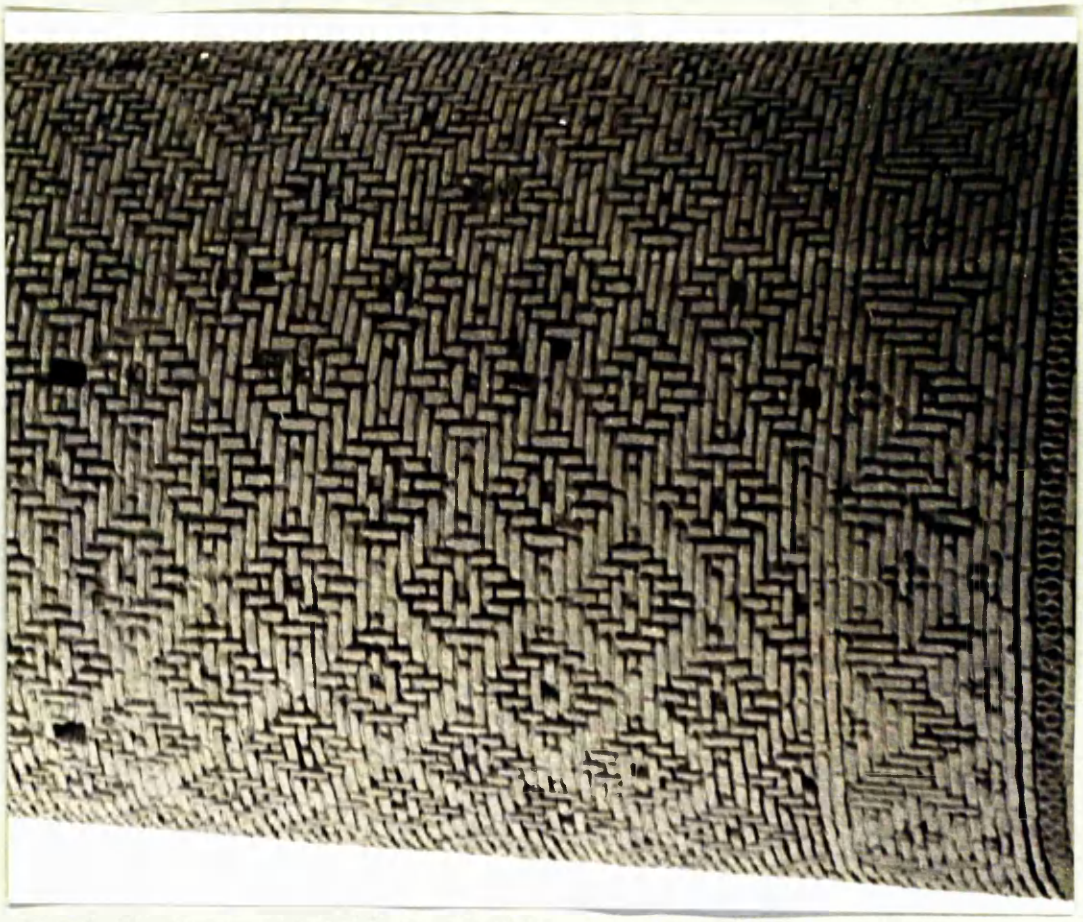

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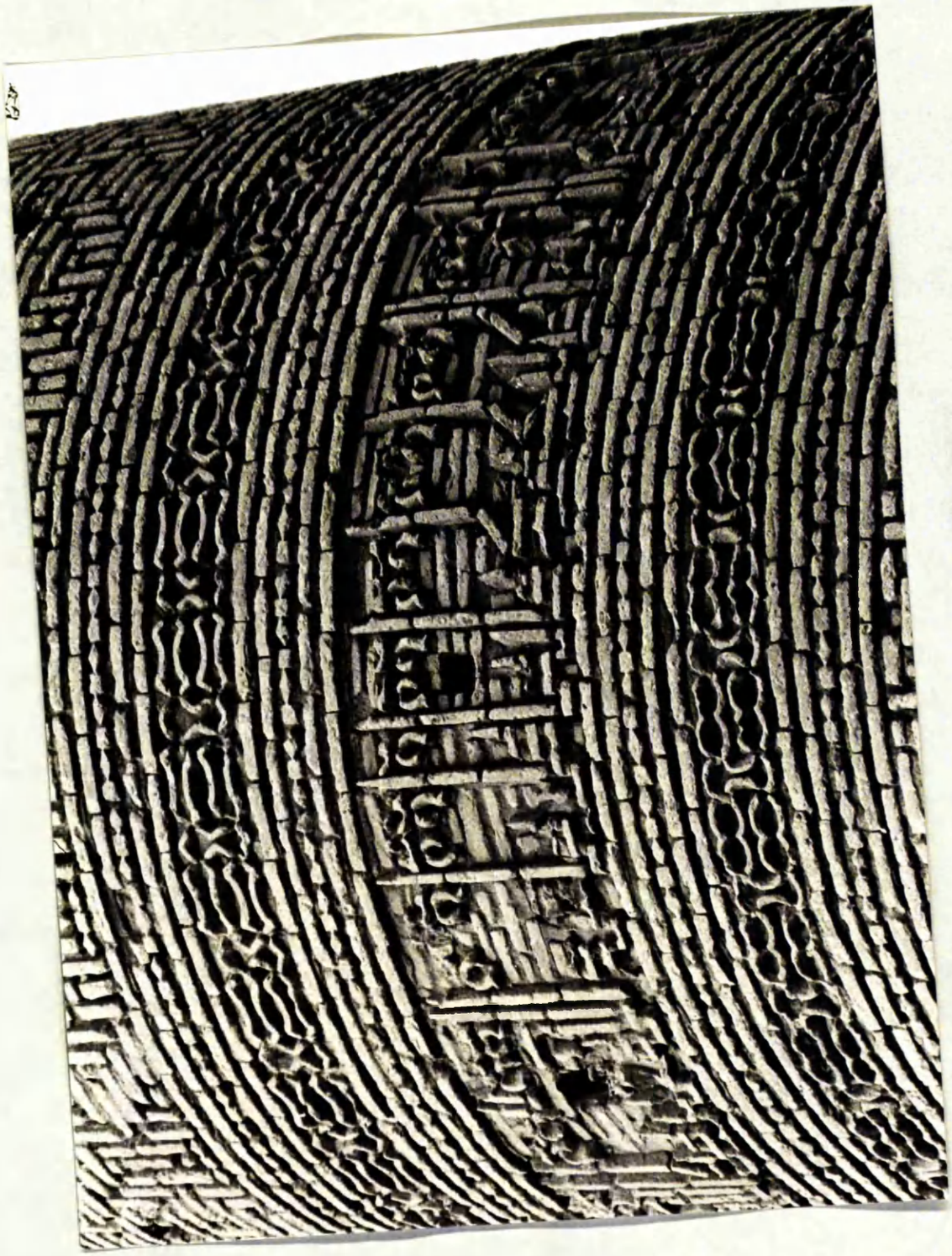

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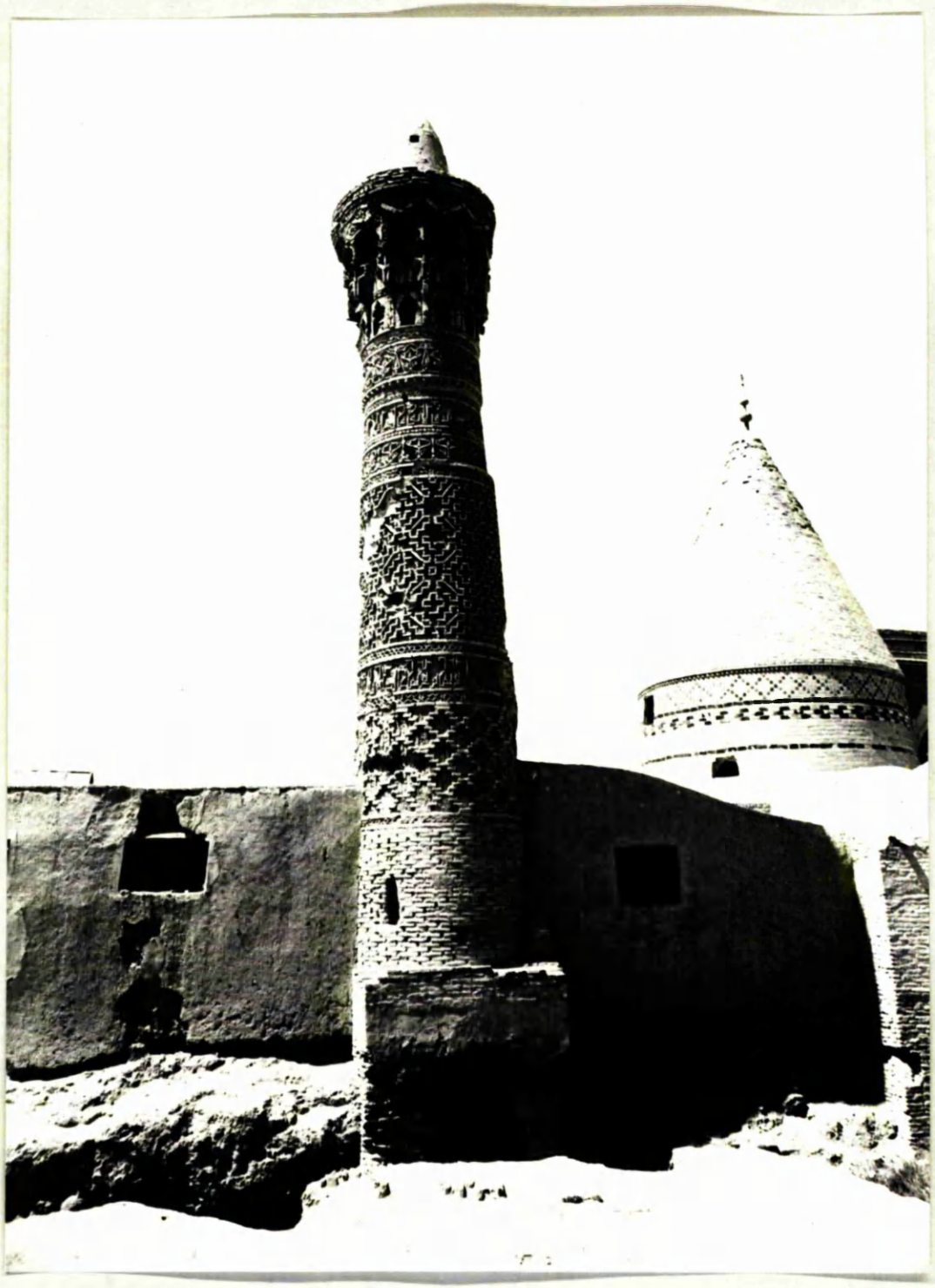
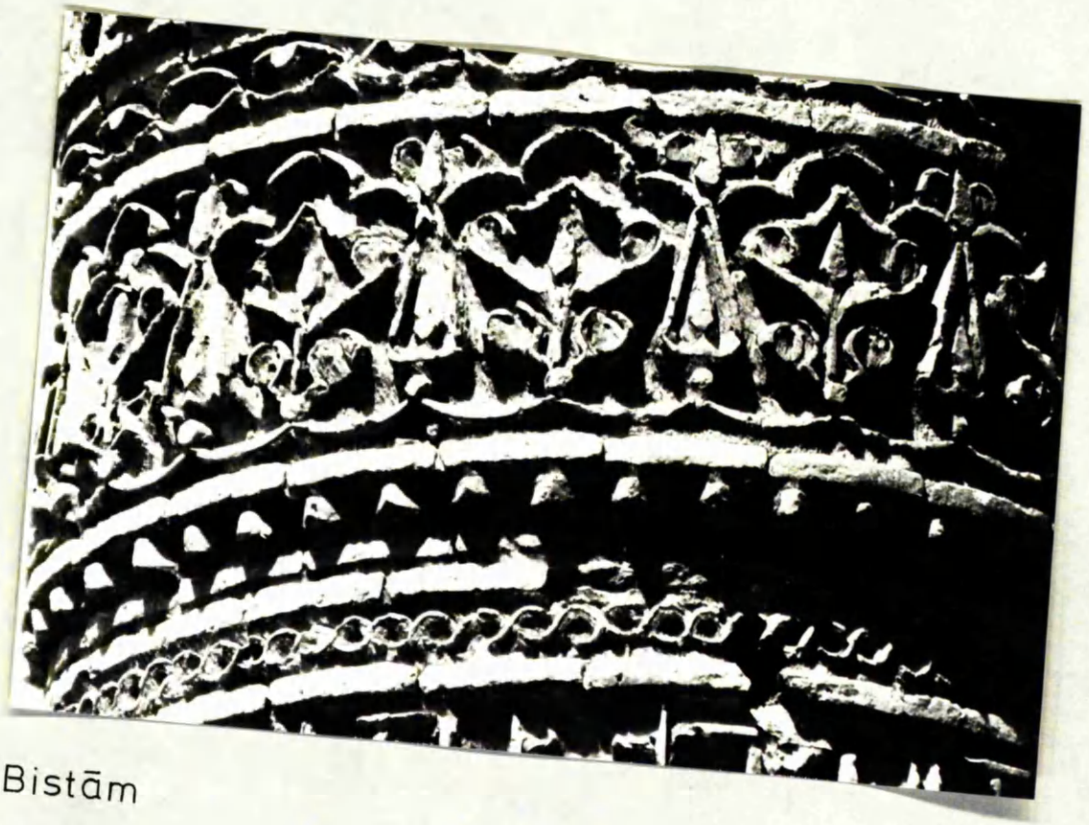


Bistām

Bistām

Bistām



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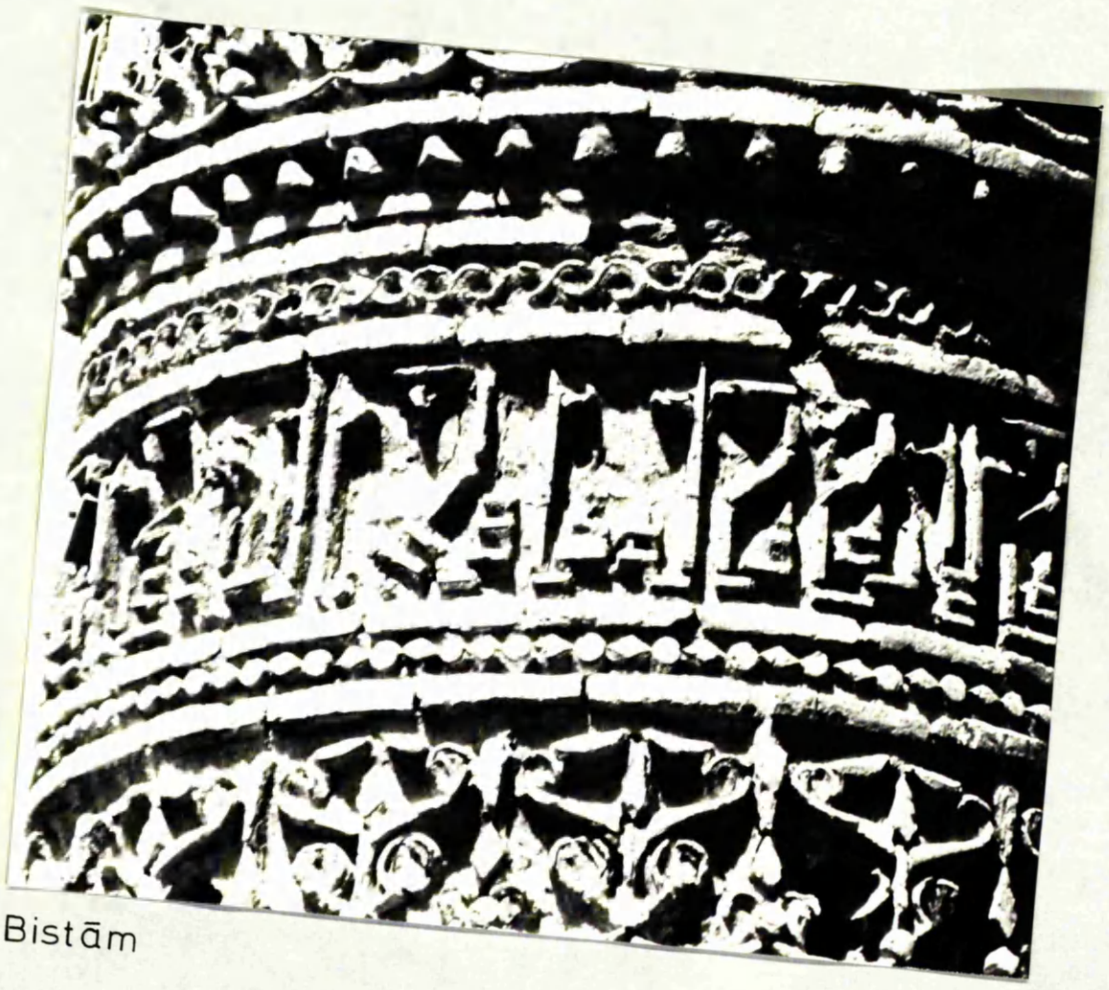

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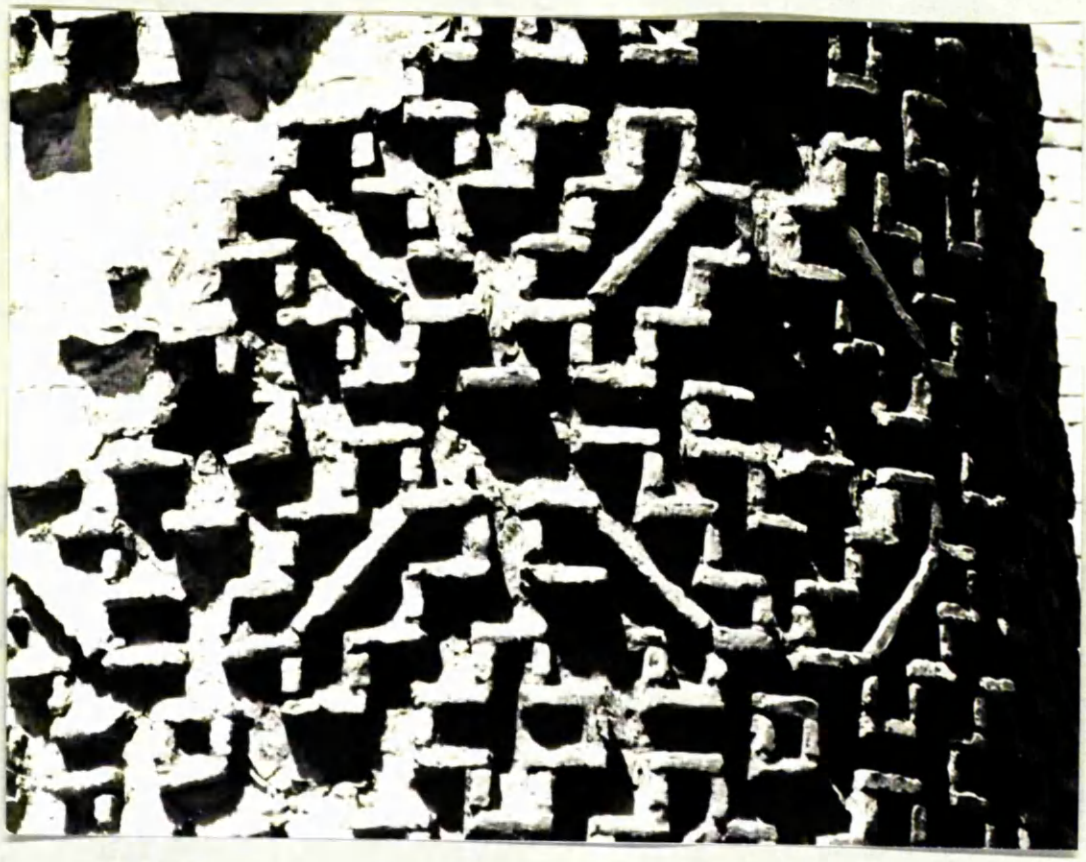

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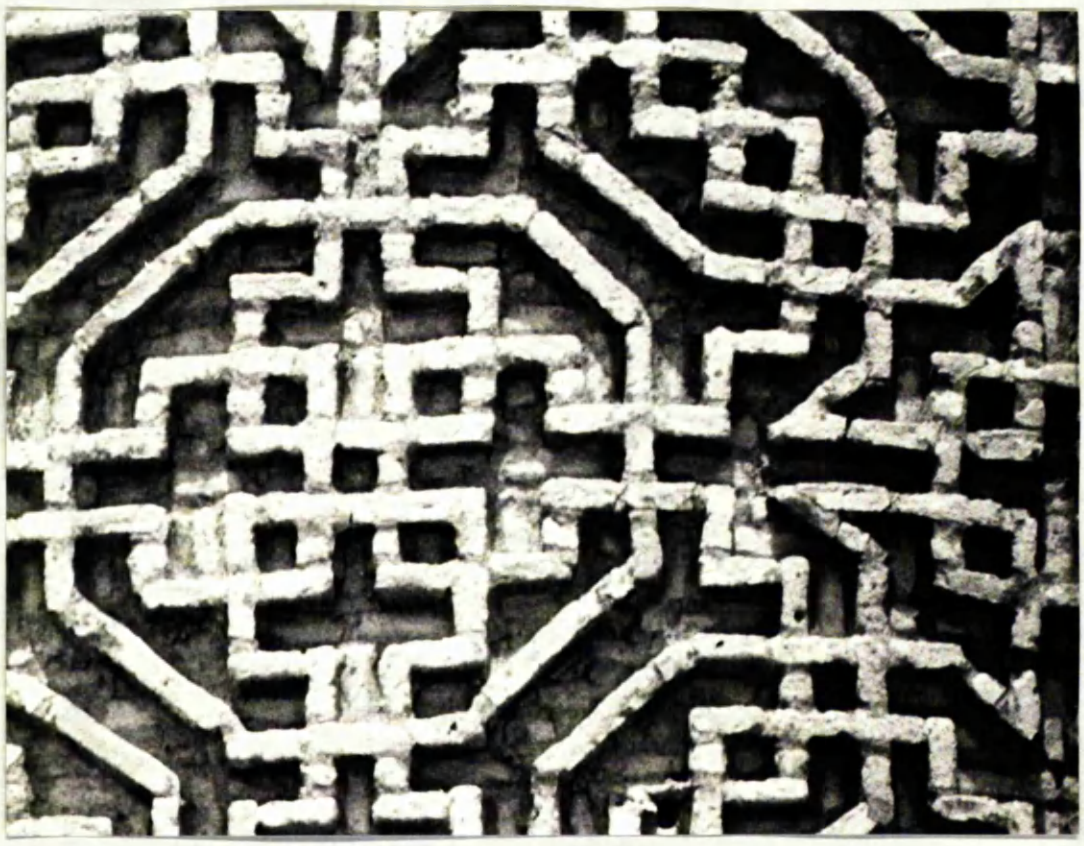

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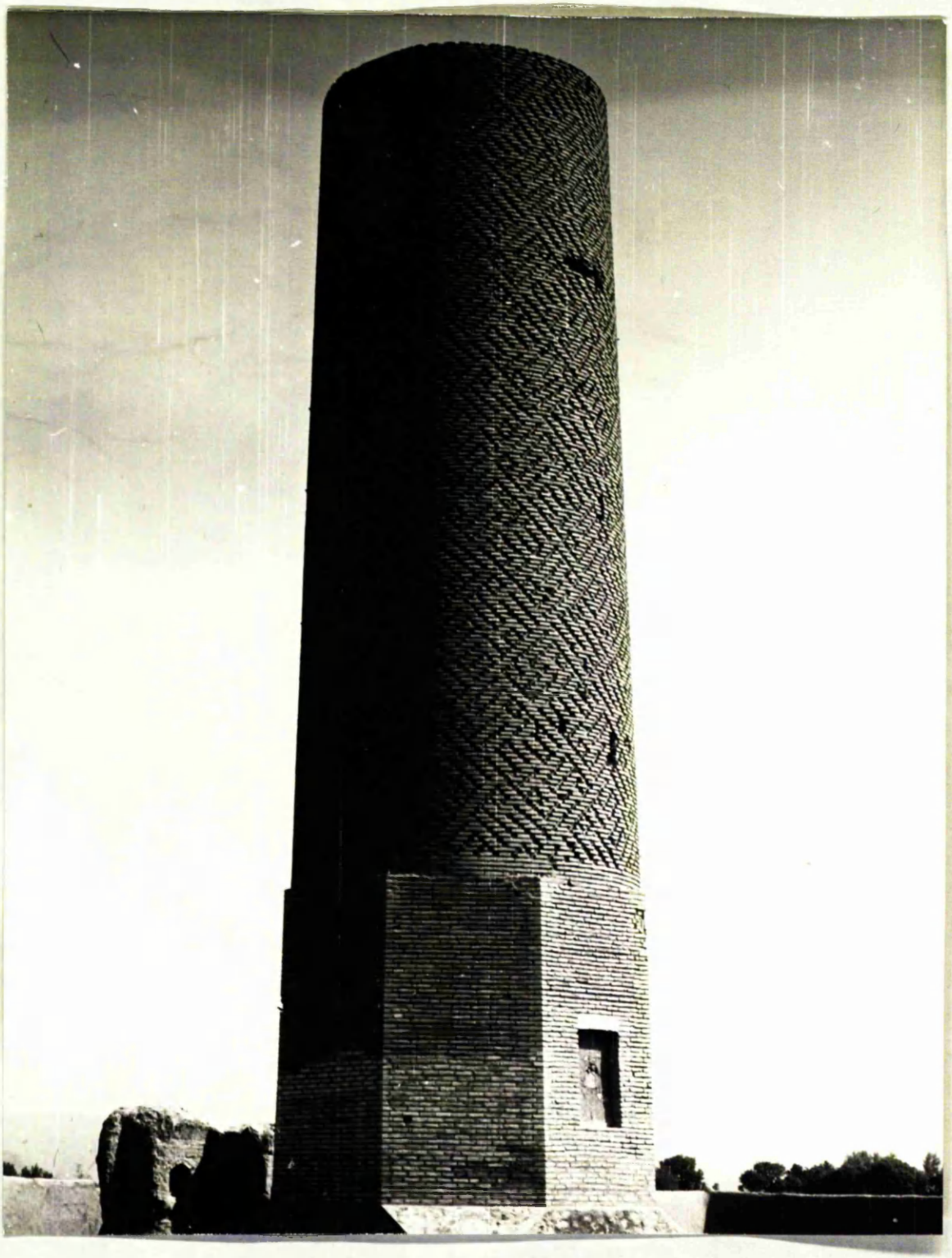

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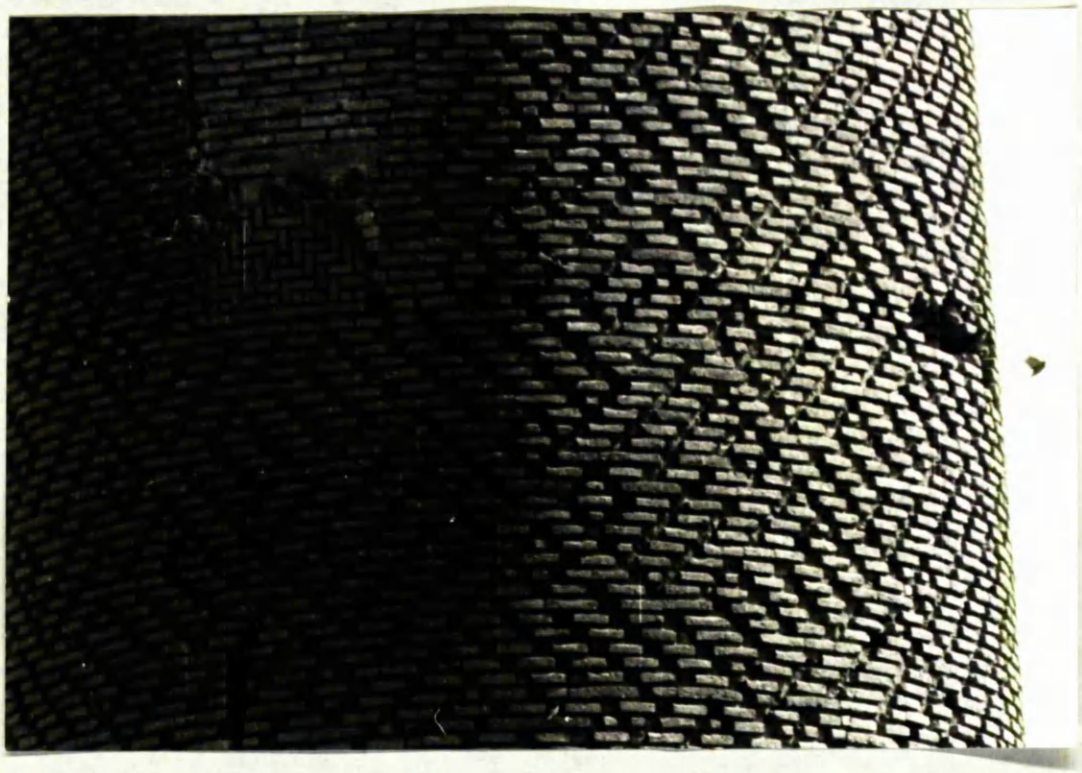
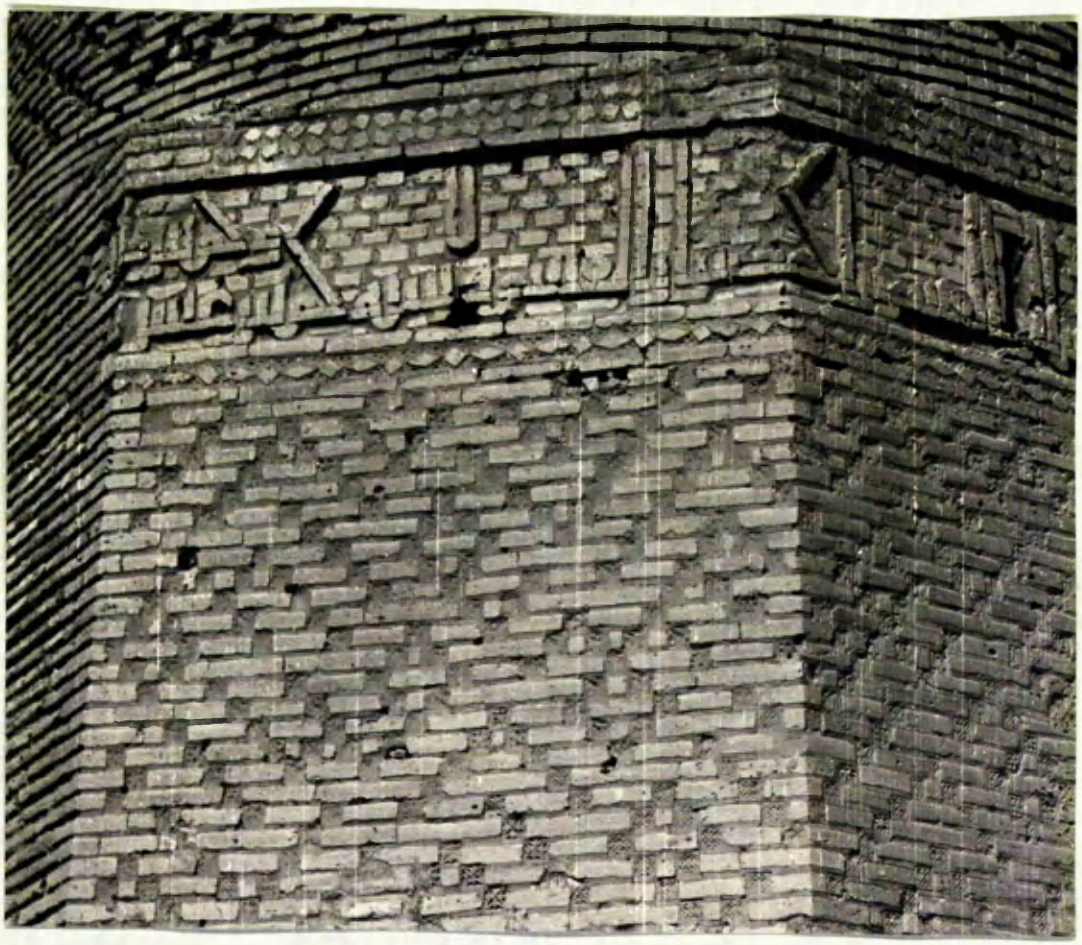
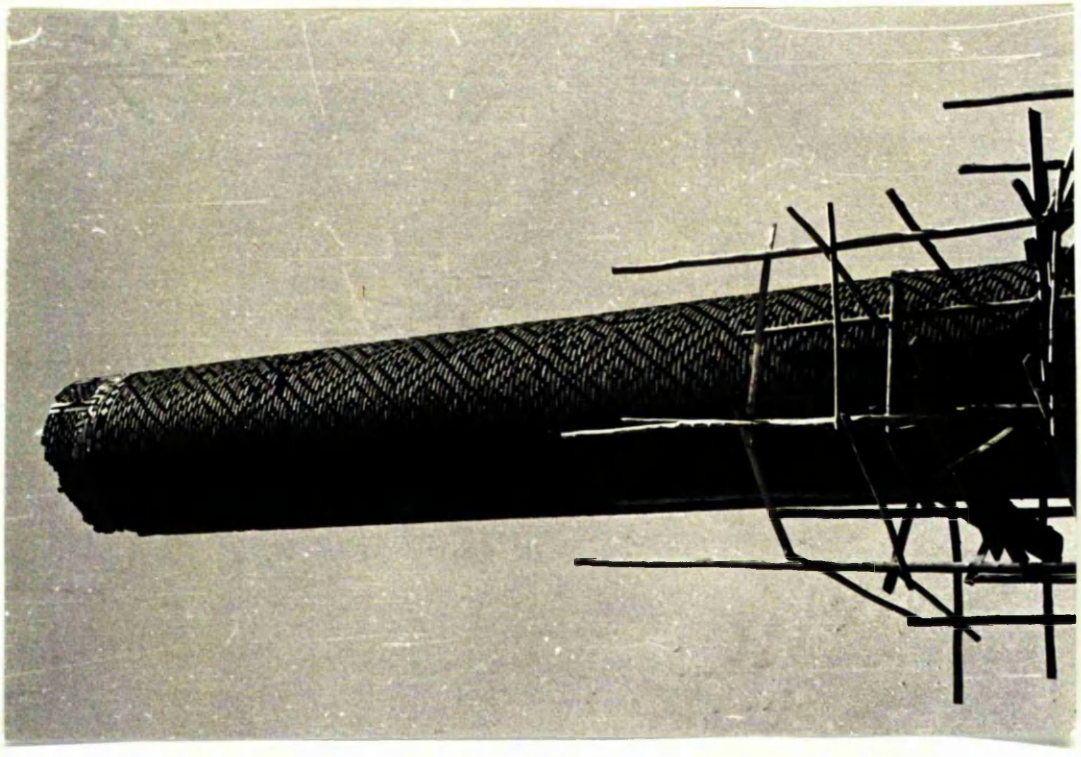


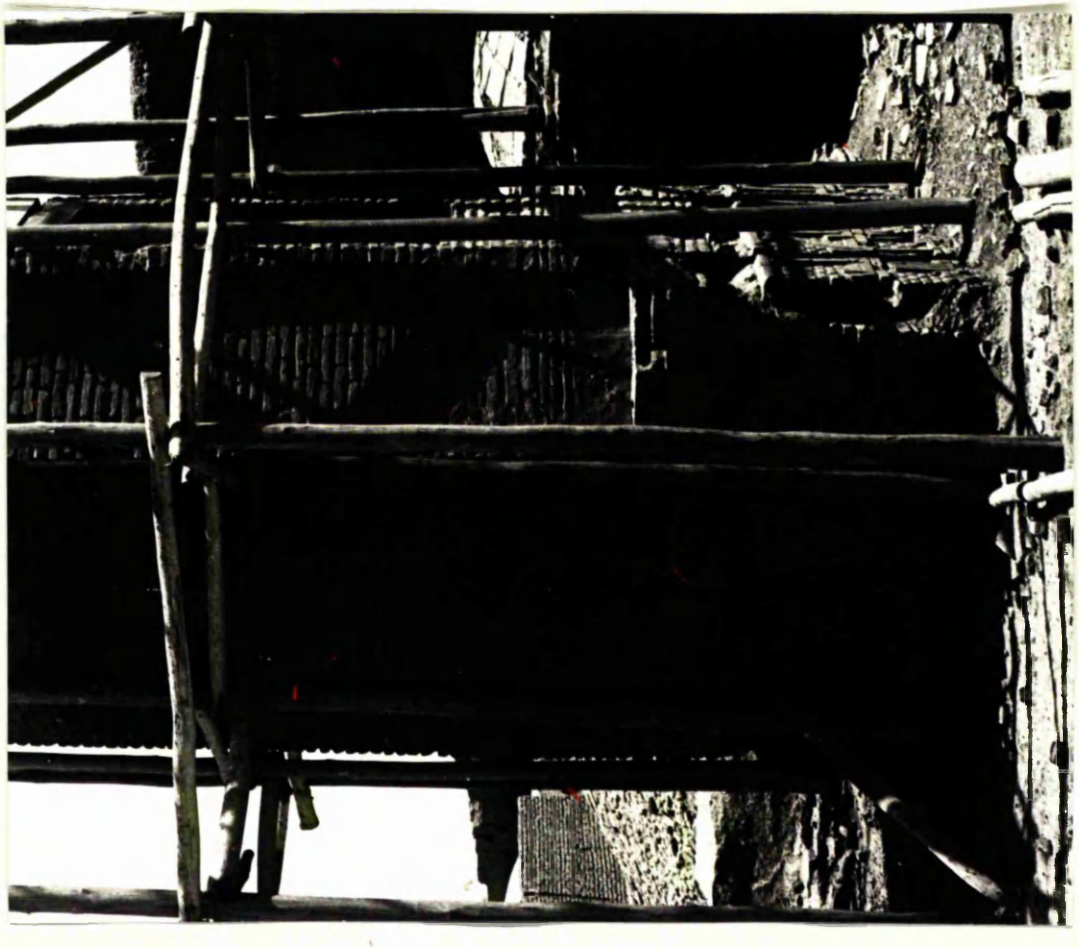
Gār. Remains of balcony projection



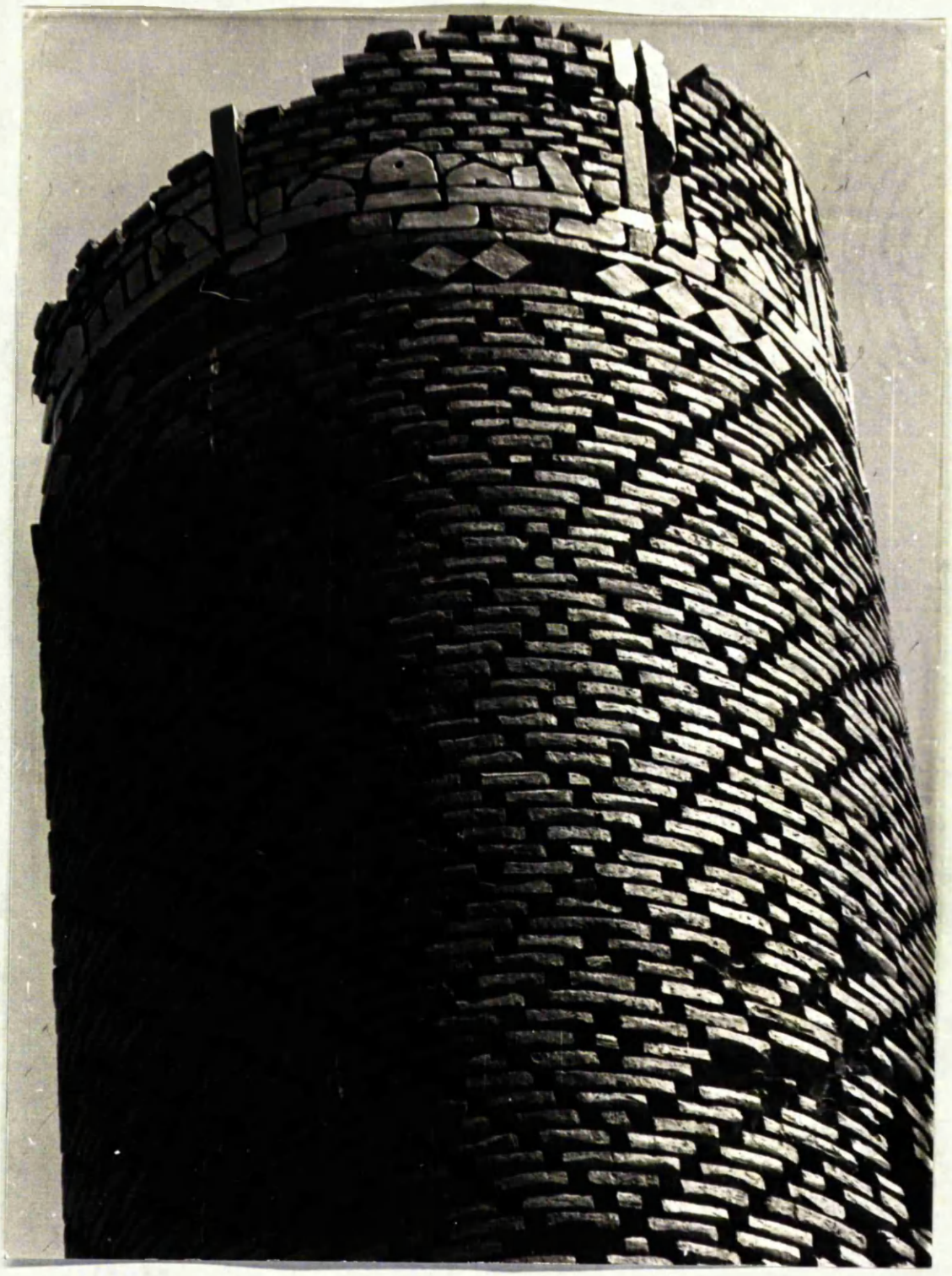
Gār. Detail of base



Sīn - Masjid-i Jāmi'



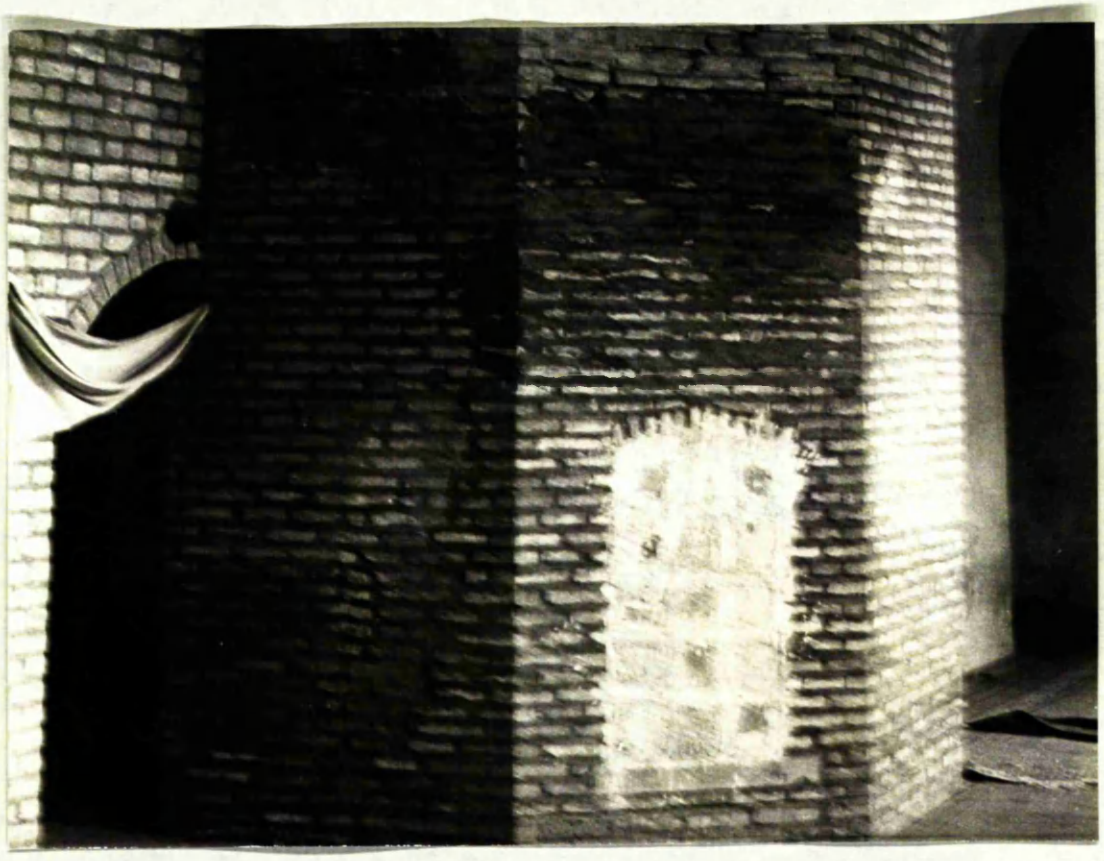
Sīn - Masjid-i Jāmi'. Minaret base



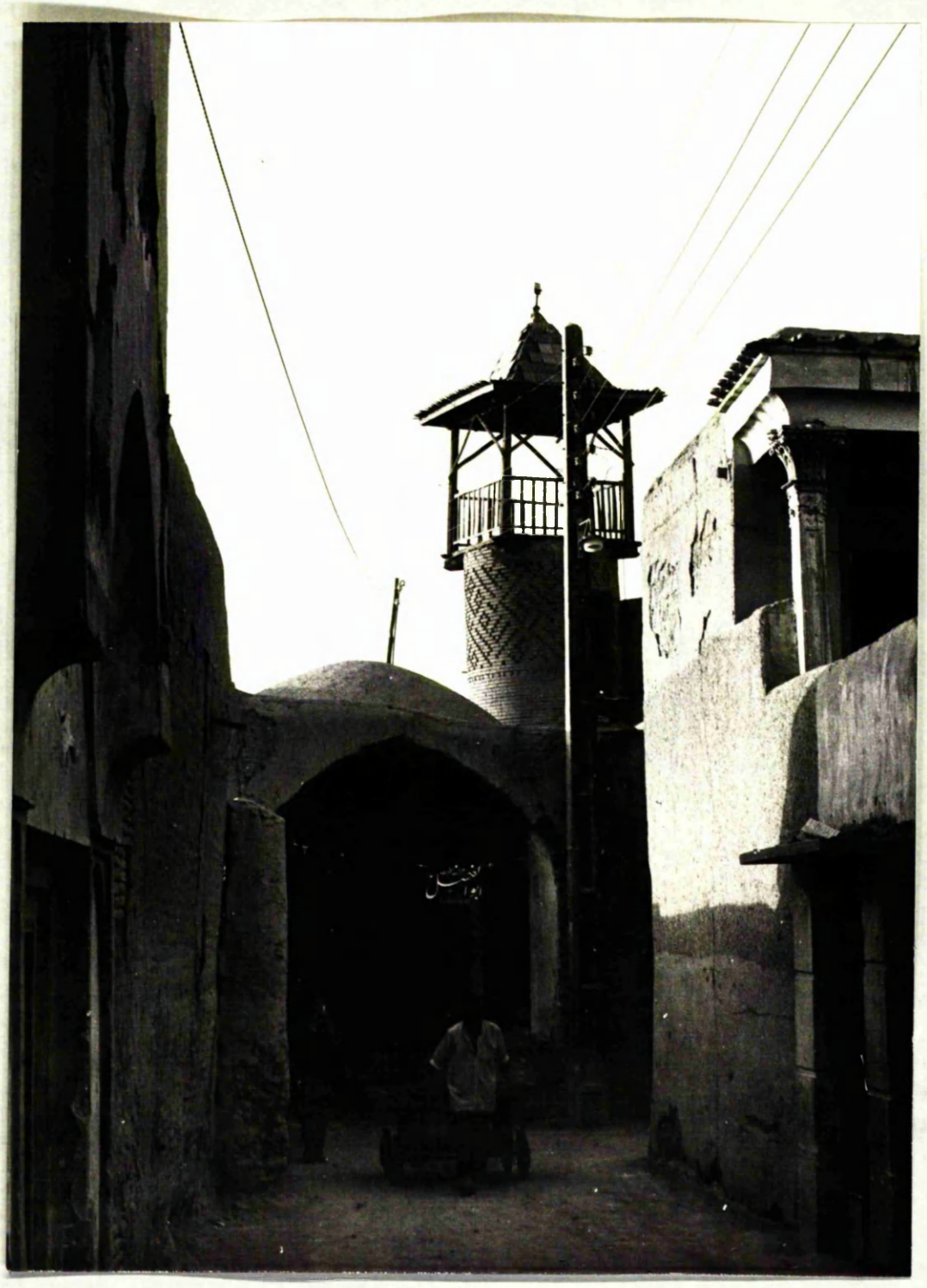
Sīn - Masjid-i Jāmi'. Faience inscription

Isfahan - Masjid-i Sha'Tā

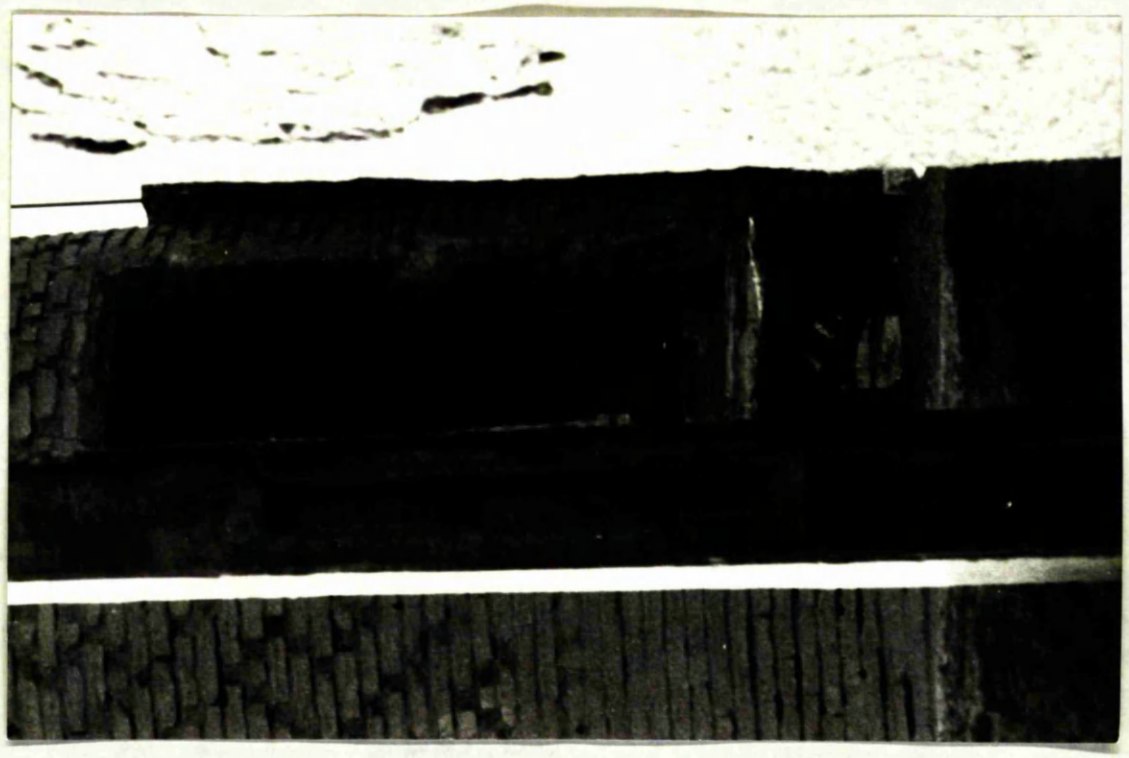
Isfahan - Masjid-i Sha'īā. Minaret detail



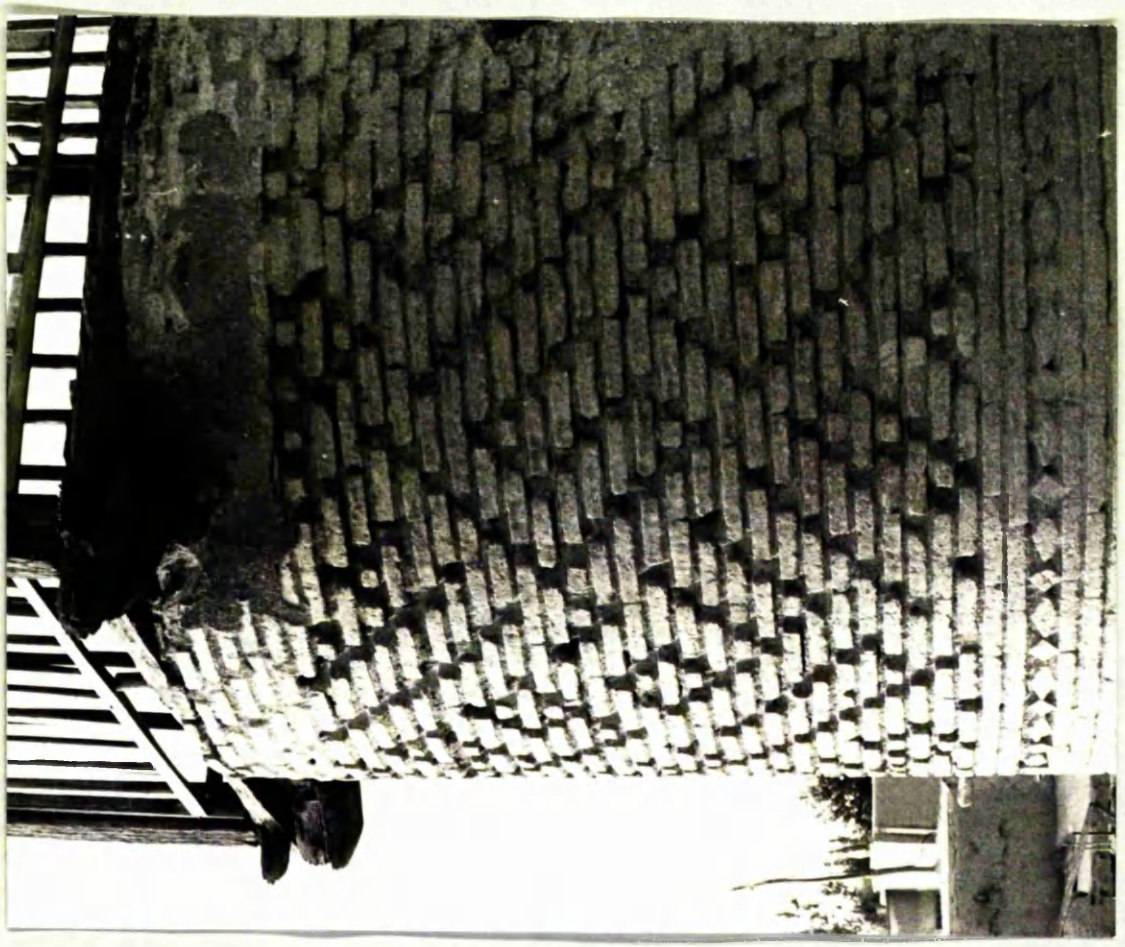
Isfahan - Masjid-i Sha'īā. Minaret base



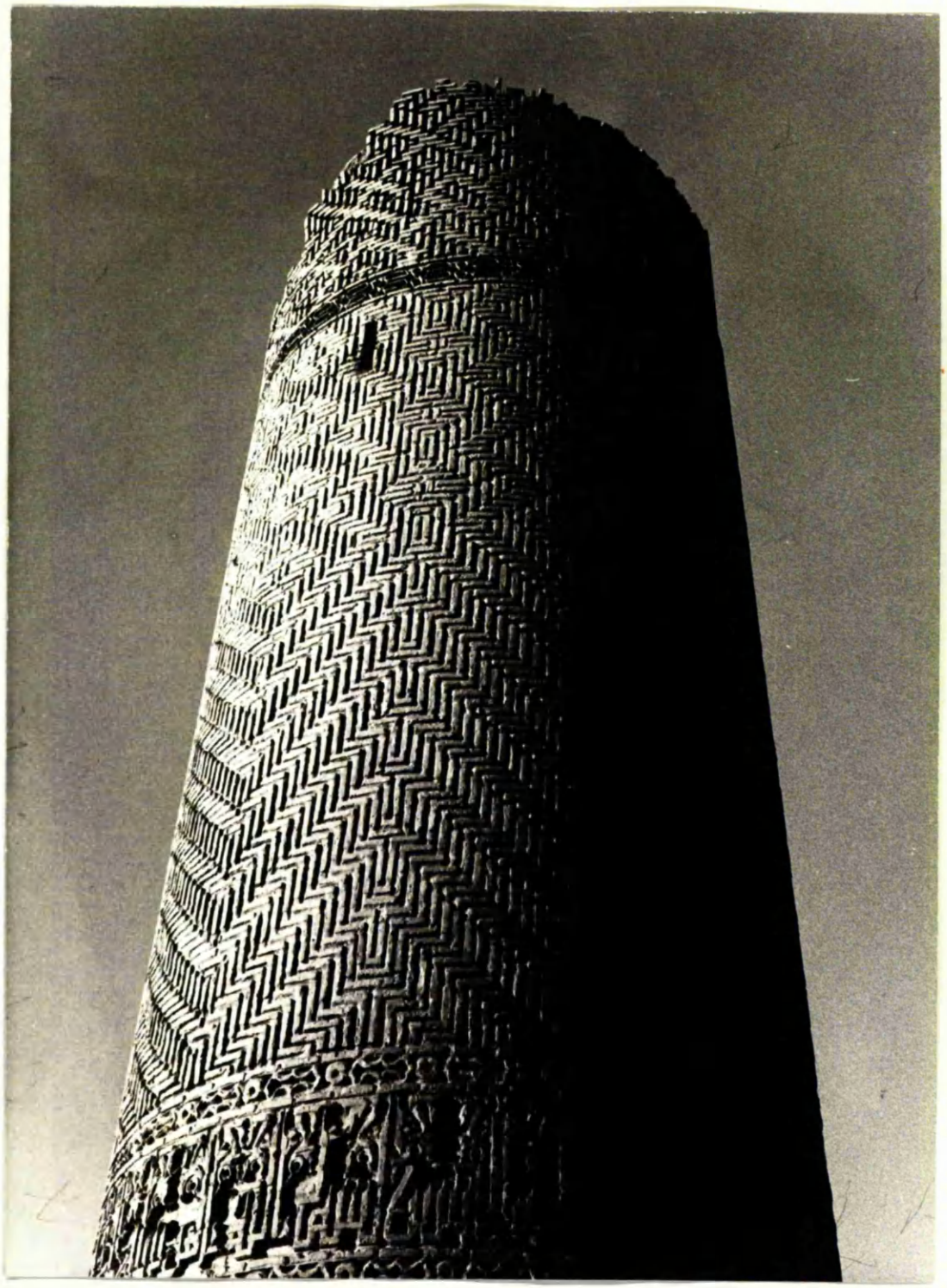
Isfahan - Manār Guldasta



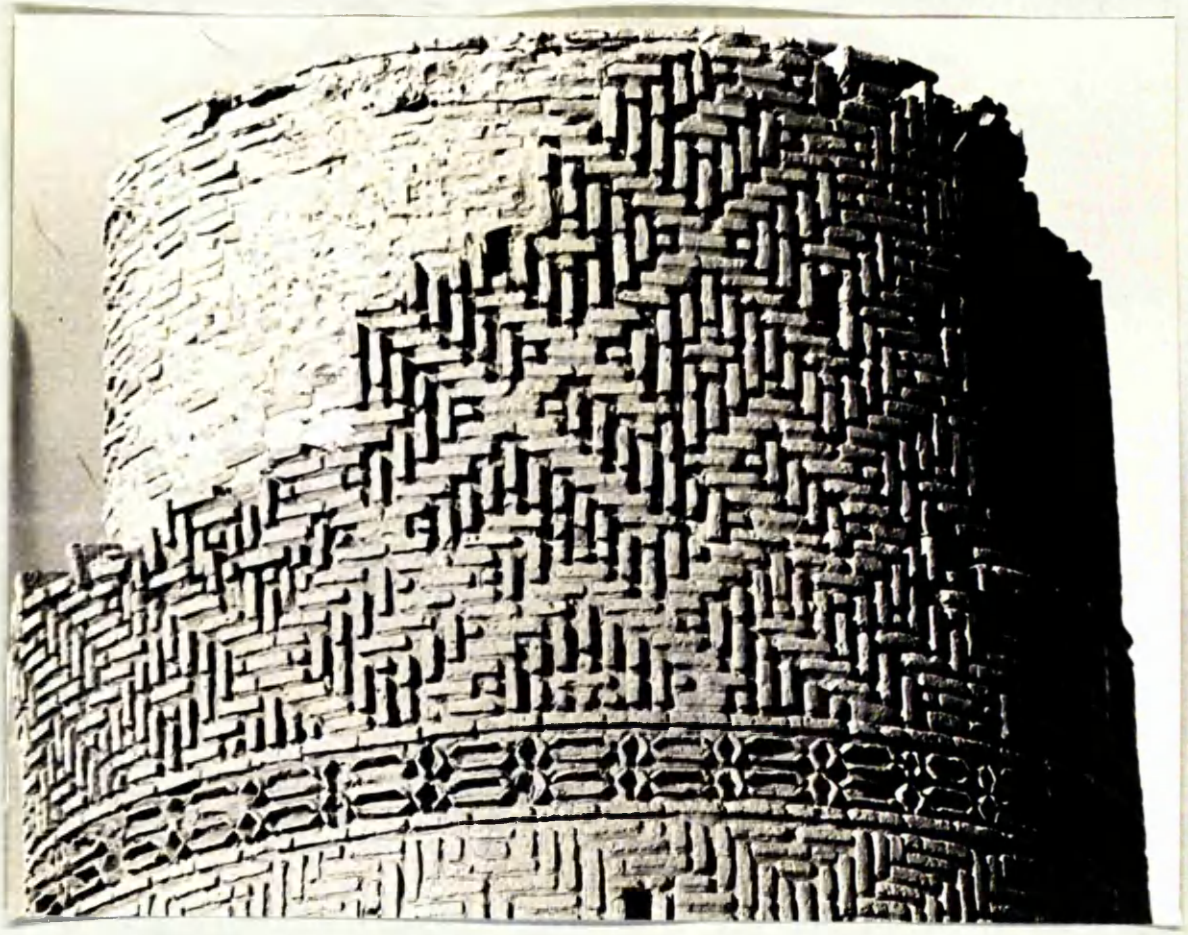
Isfahan - Manār Guldasta. Door



Isfahan - Manār Guldasta. Pattern detail

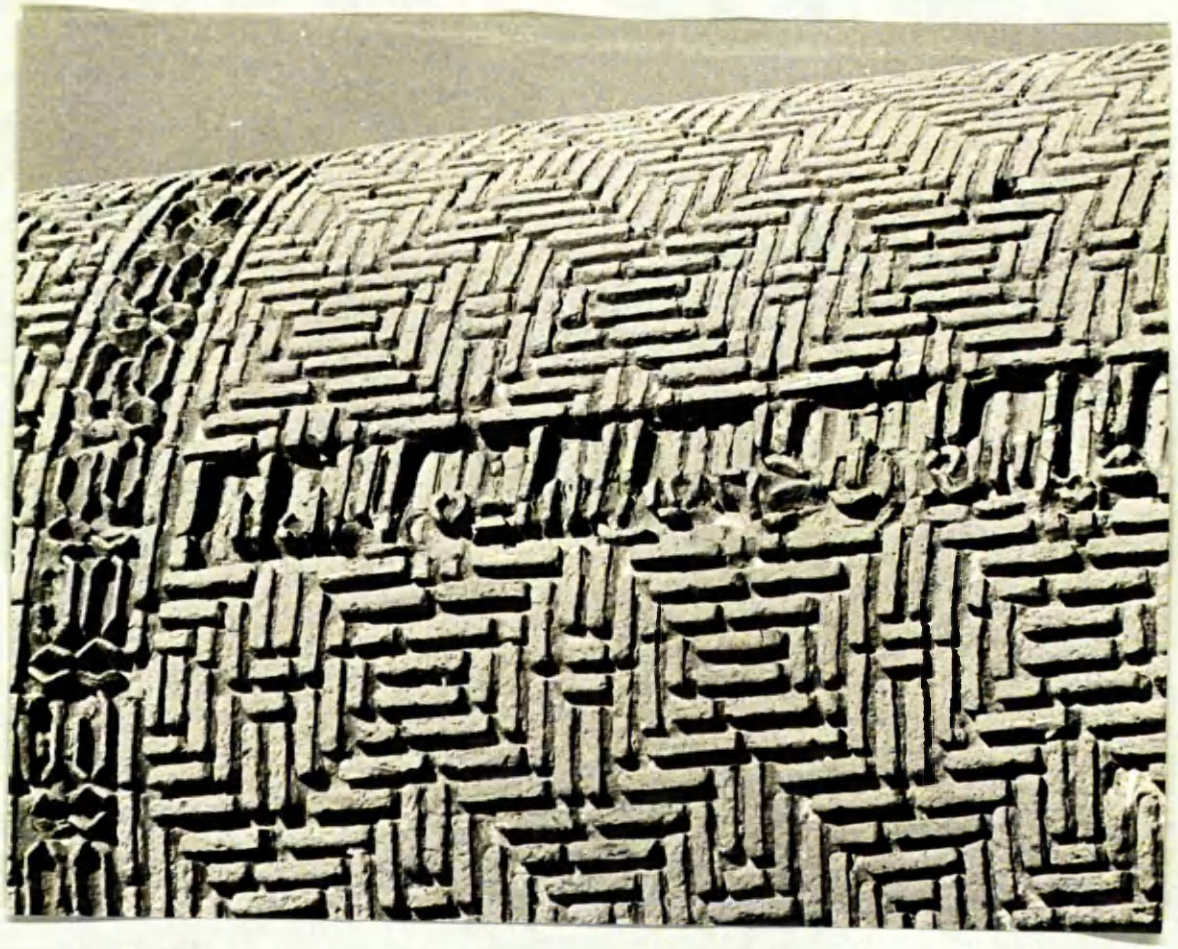


Fīrūzābād



Fīrūzābād

Fīrūzābād



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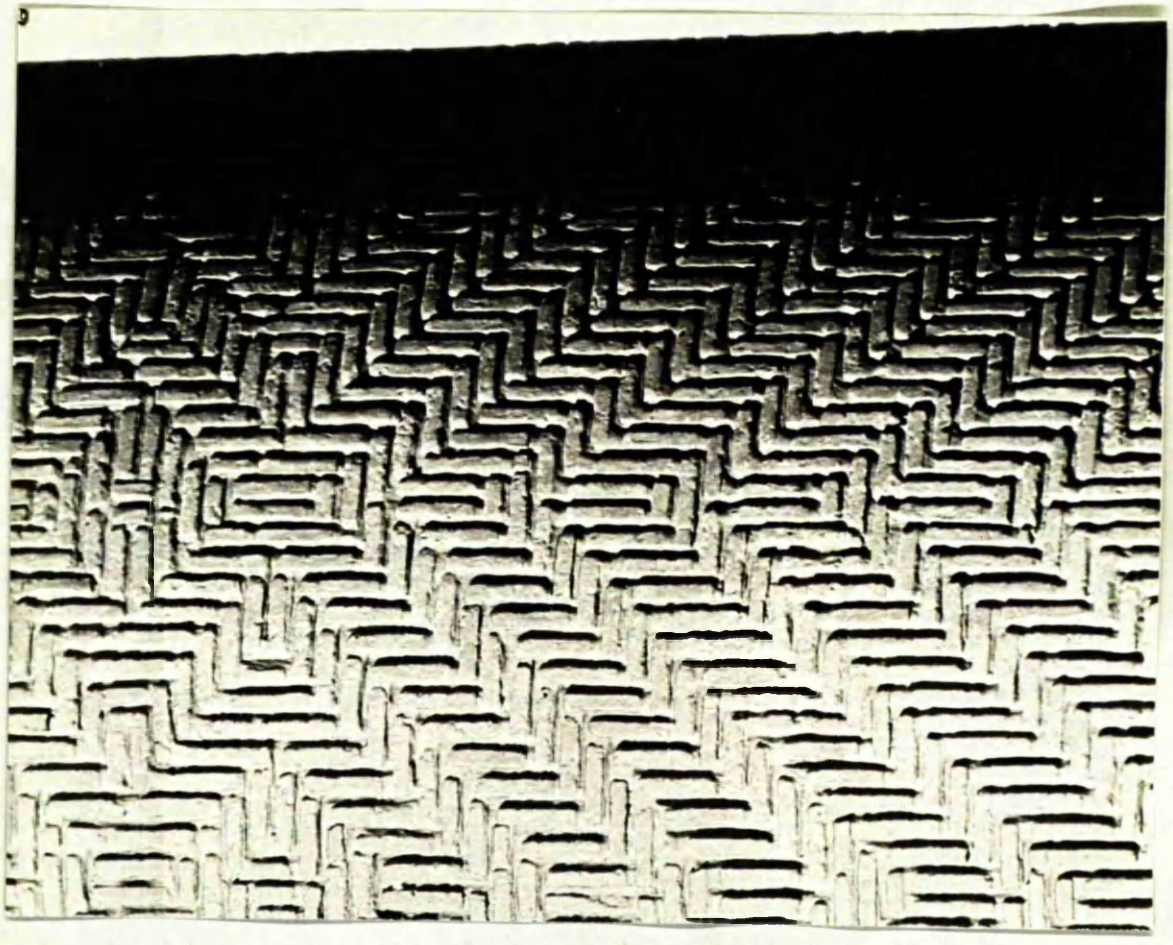
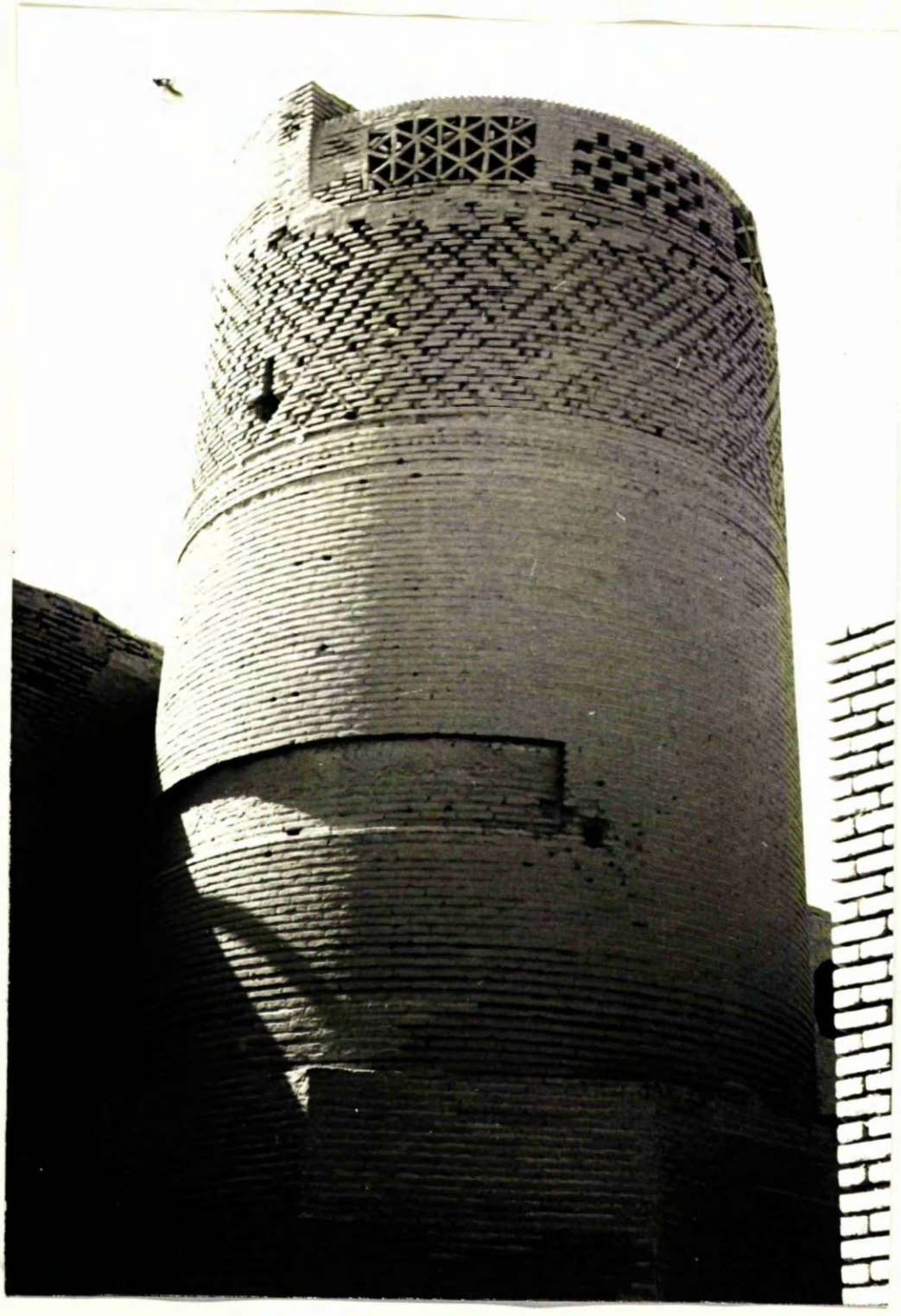
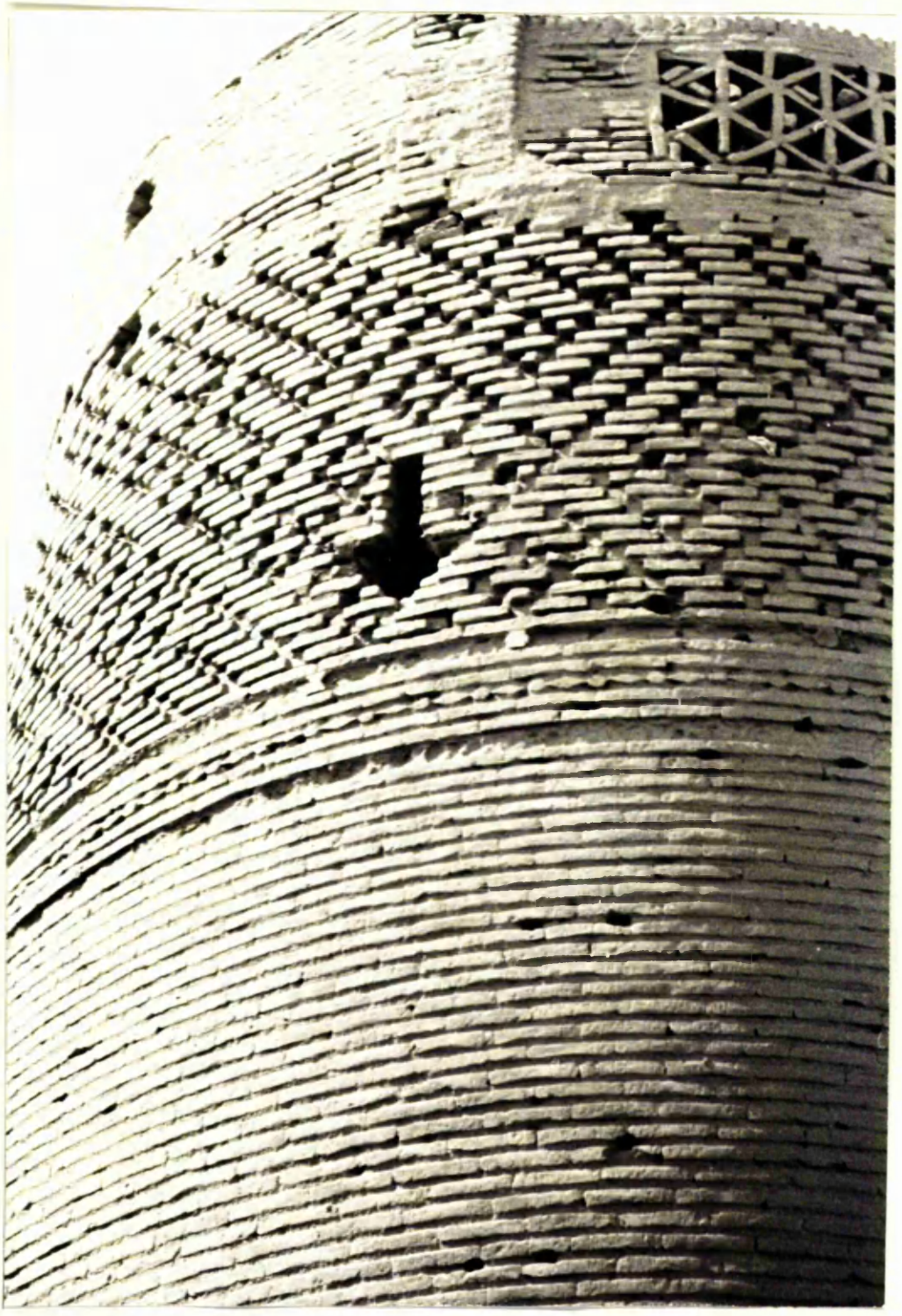


Fīrūzābād



Zavara - Masjid-i Jāmi'



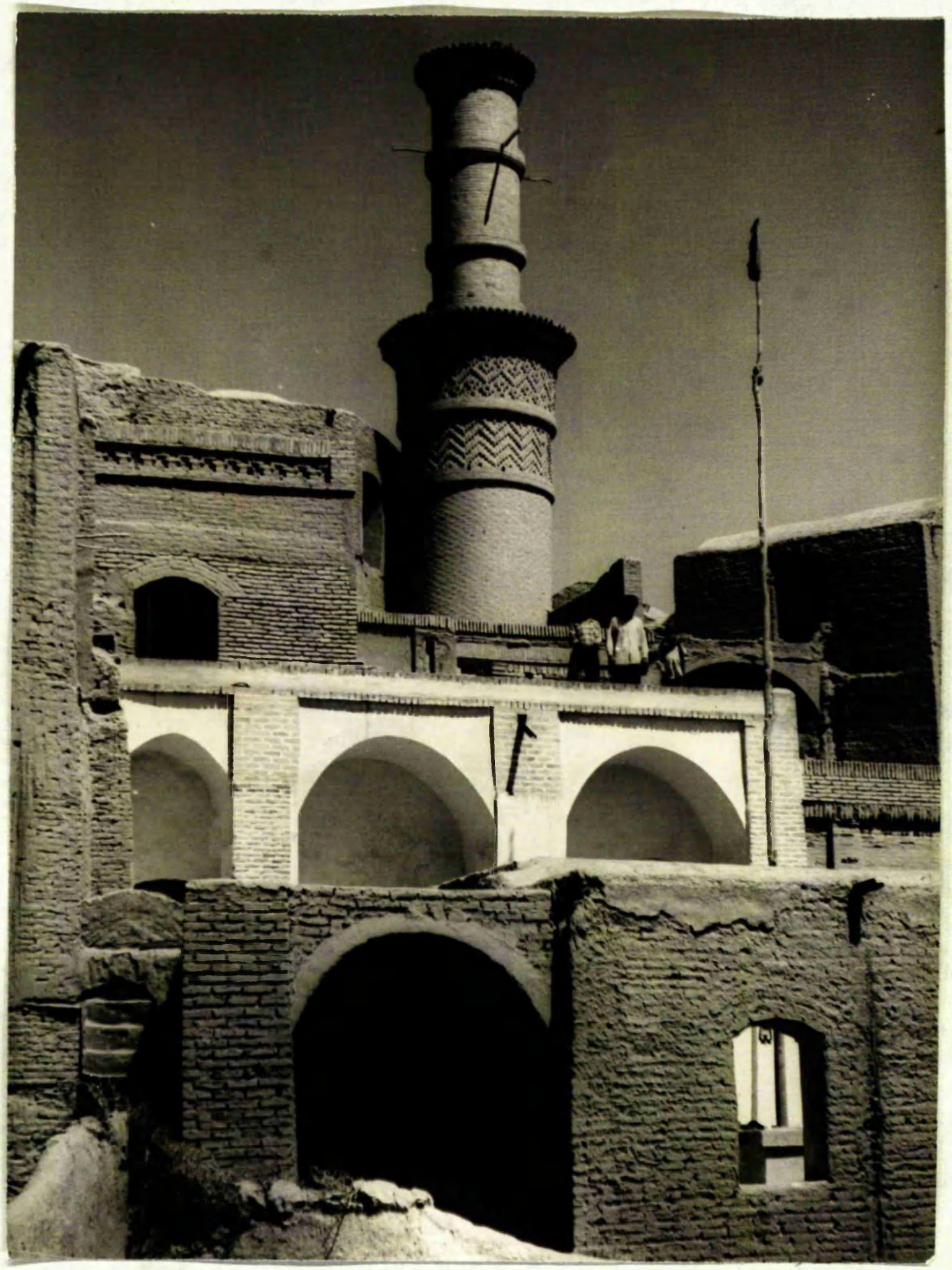
Zavara - Masjid-i Jāmi'

Ardistān - Masjid-i Jāmi'

Gurgān - Masjid-i Jāmi'

Gurgān - Masjid-i Jāmi'. Minaret detail

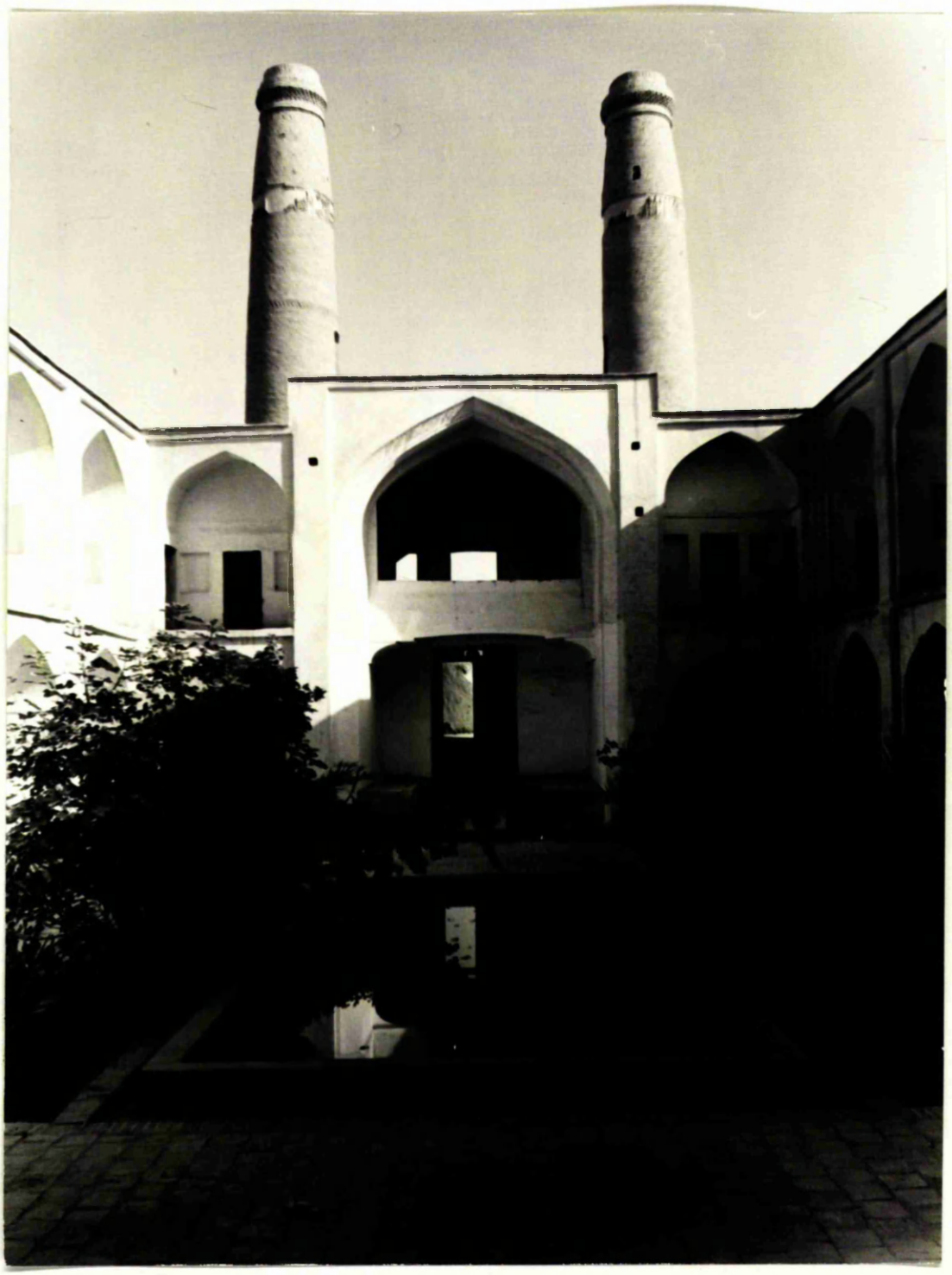
Gurgān - Masjid-i Jāmi'. Inscription



Khurānaq - Masjid-i Jāmi'

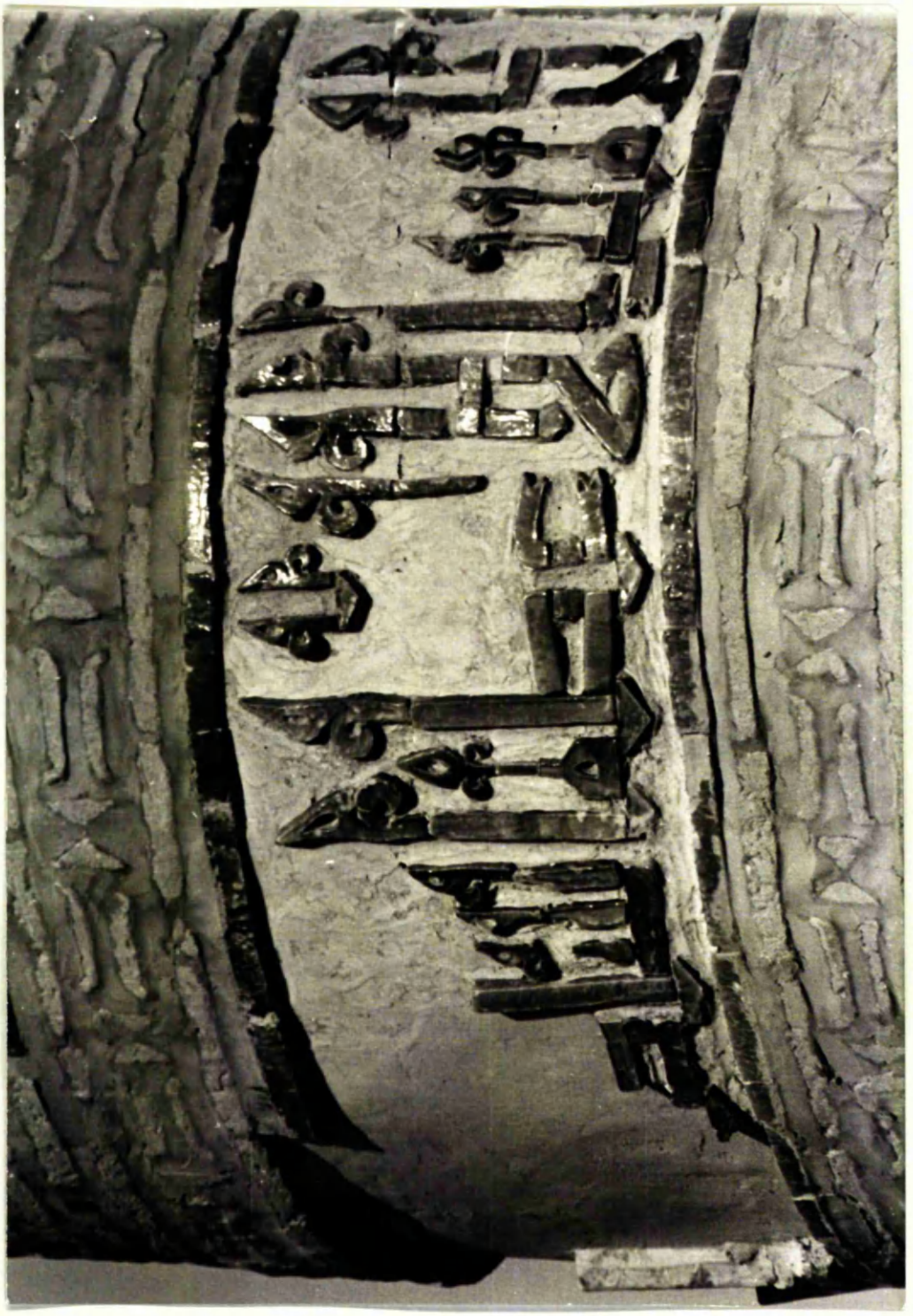
Sabzivār - Masjid-i Pāmanār

Sabzivār - Masjid-i Pāmanār. Minaret inscription



Ṭabas - Madrasa Daw Manār

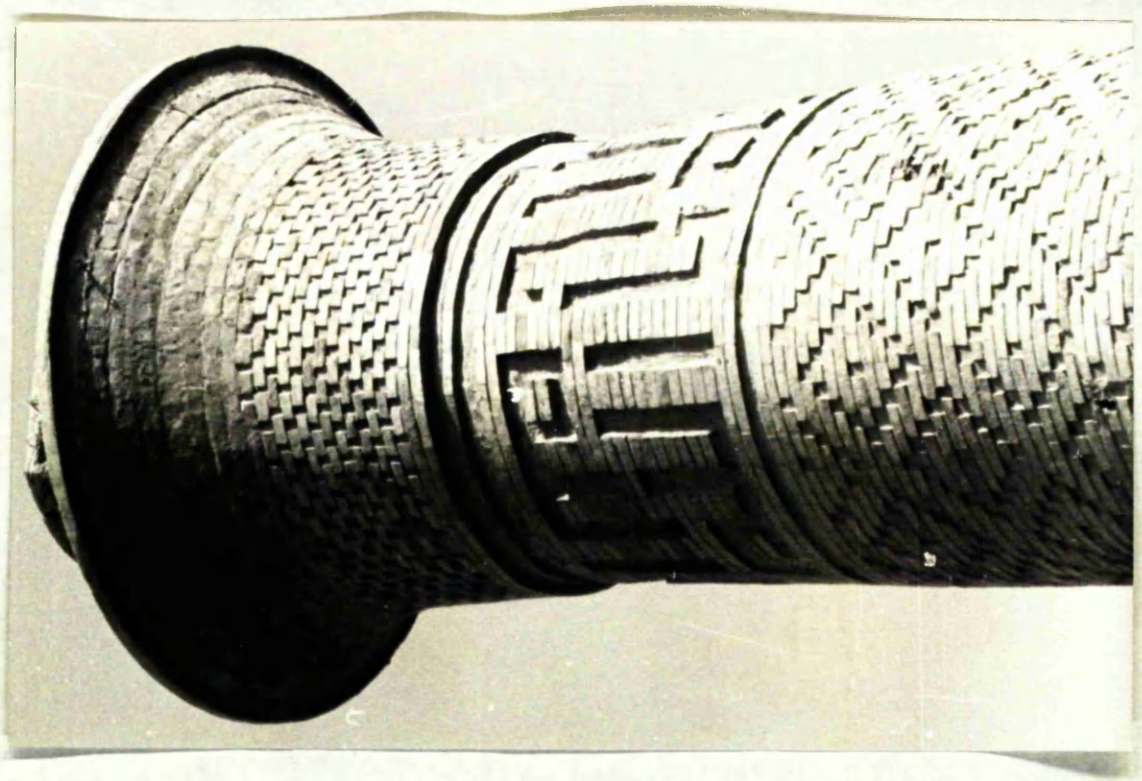
Ṭabas - Madrasa Daw Manār



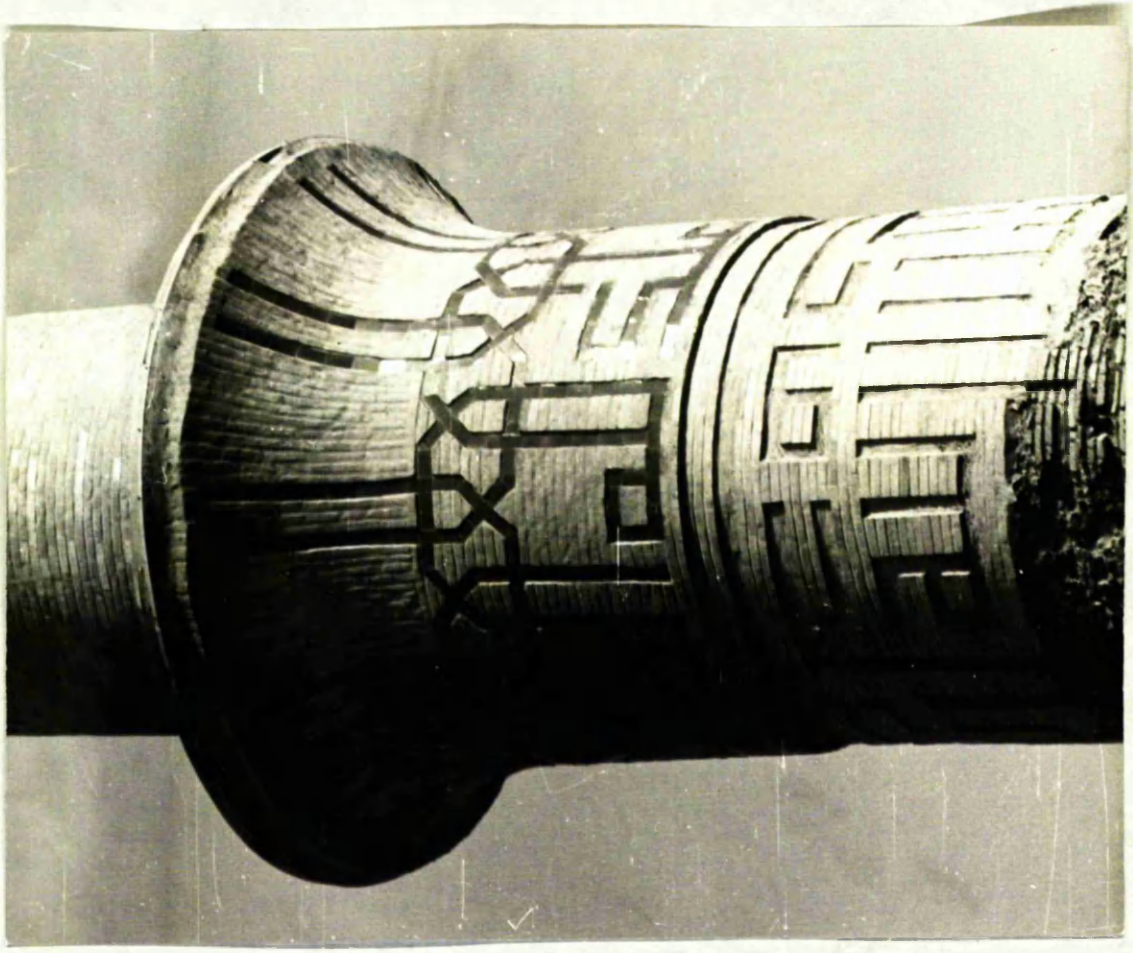
Ṭabas - Madrasa Daw Manār

Ardistān - Masjid-i Imām Ḥasan

Isfahan - Manār 'Alī



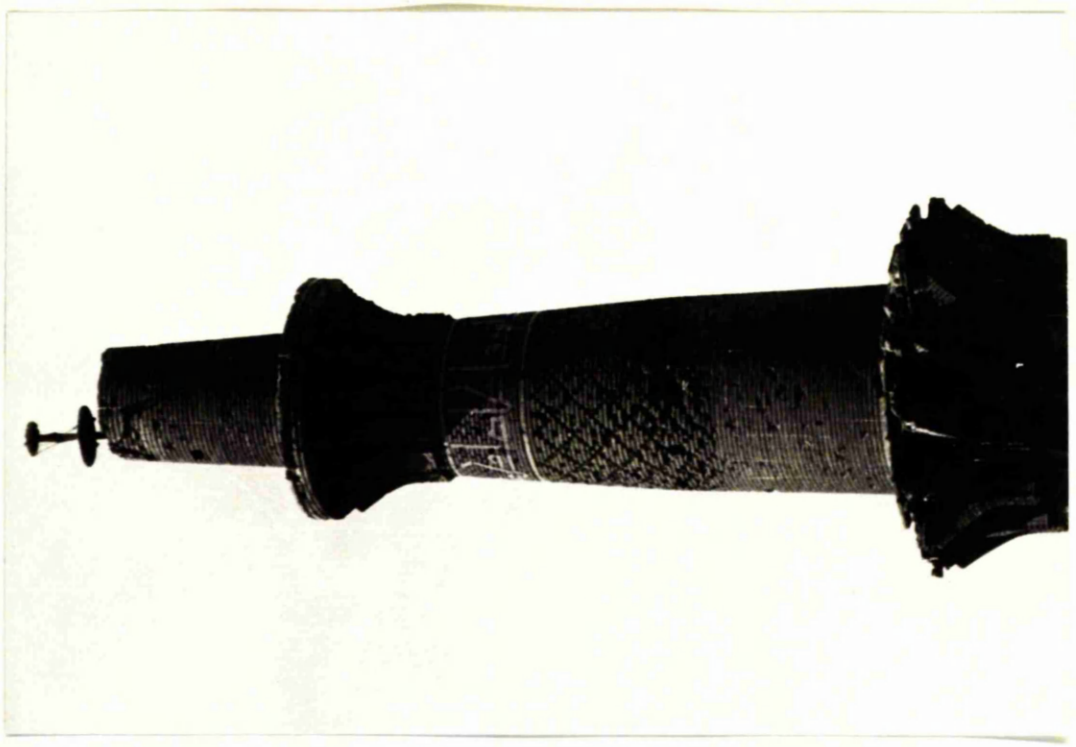
Isfahan - Manār 'Alī. Upper balcony



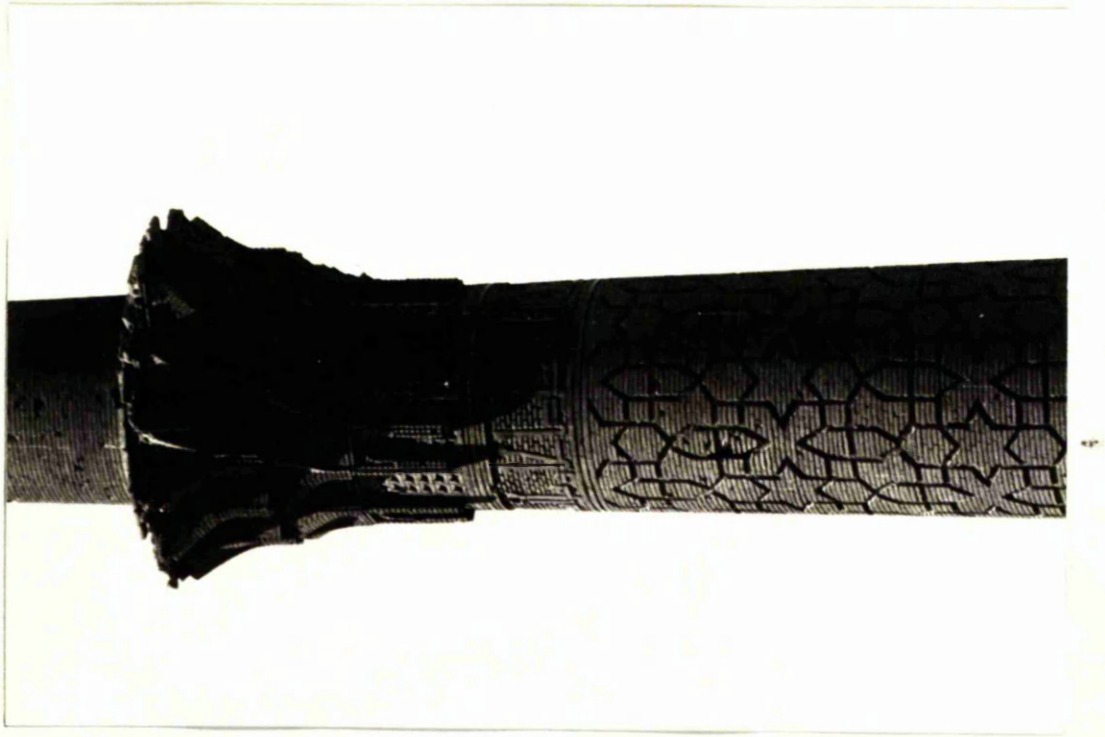
Isfahan - Manār 'Alī. Lower balcony

Isfahan - Manār 'Alī. Lower section

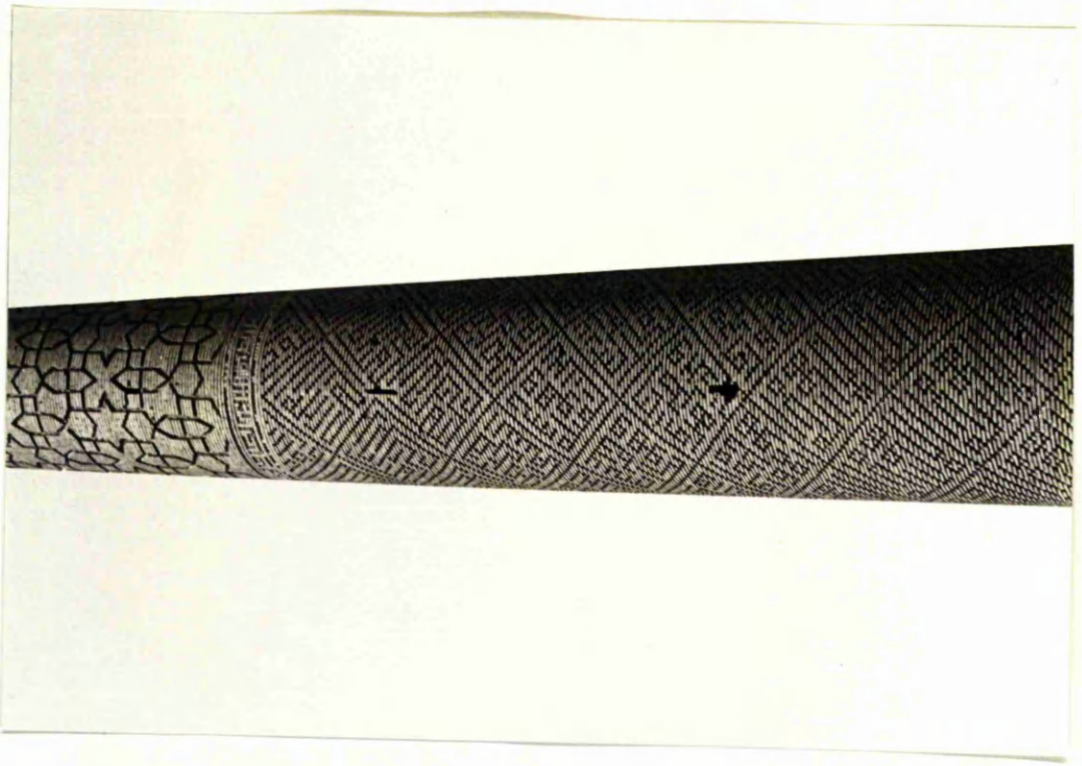
Isfahan - Manār 'Alī. Base inscription



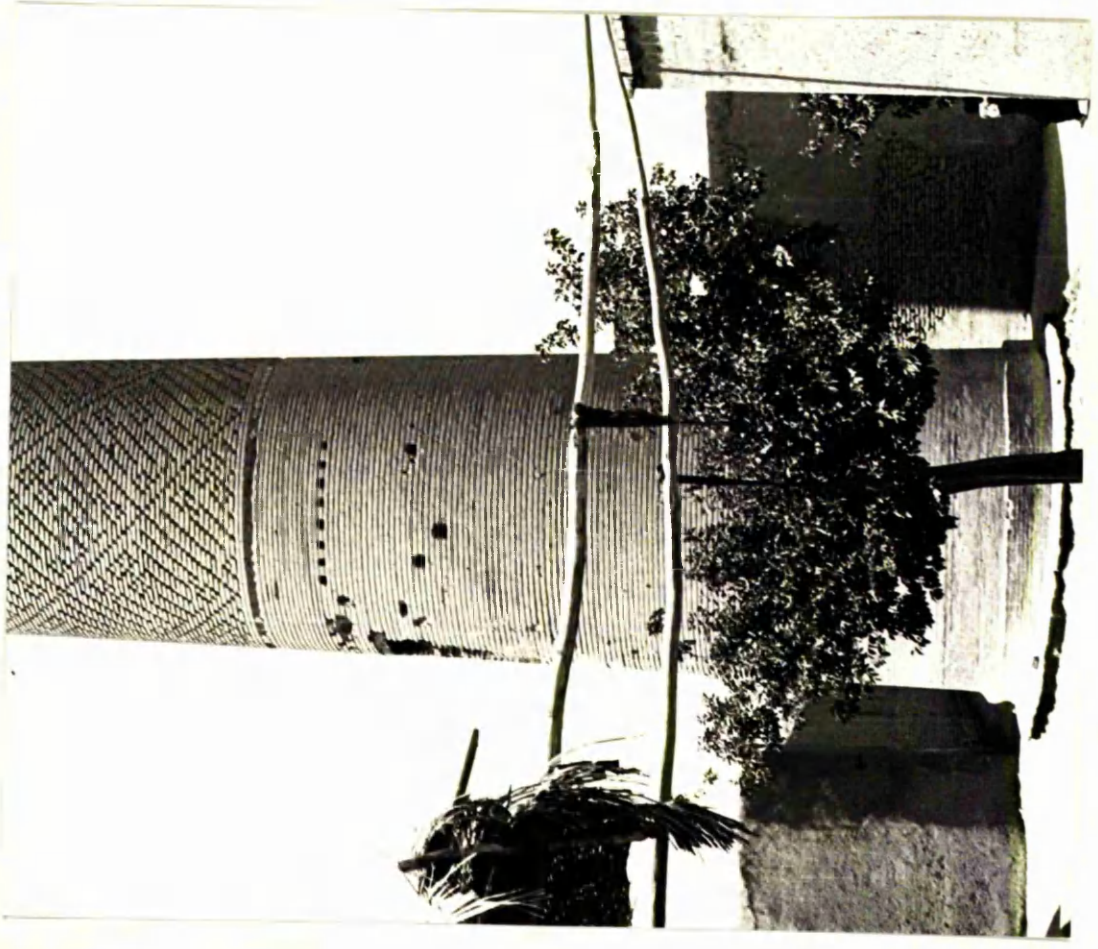
Isfahan - Manār Sarabān



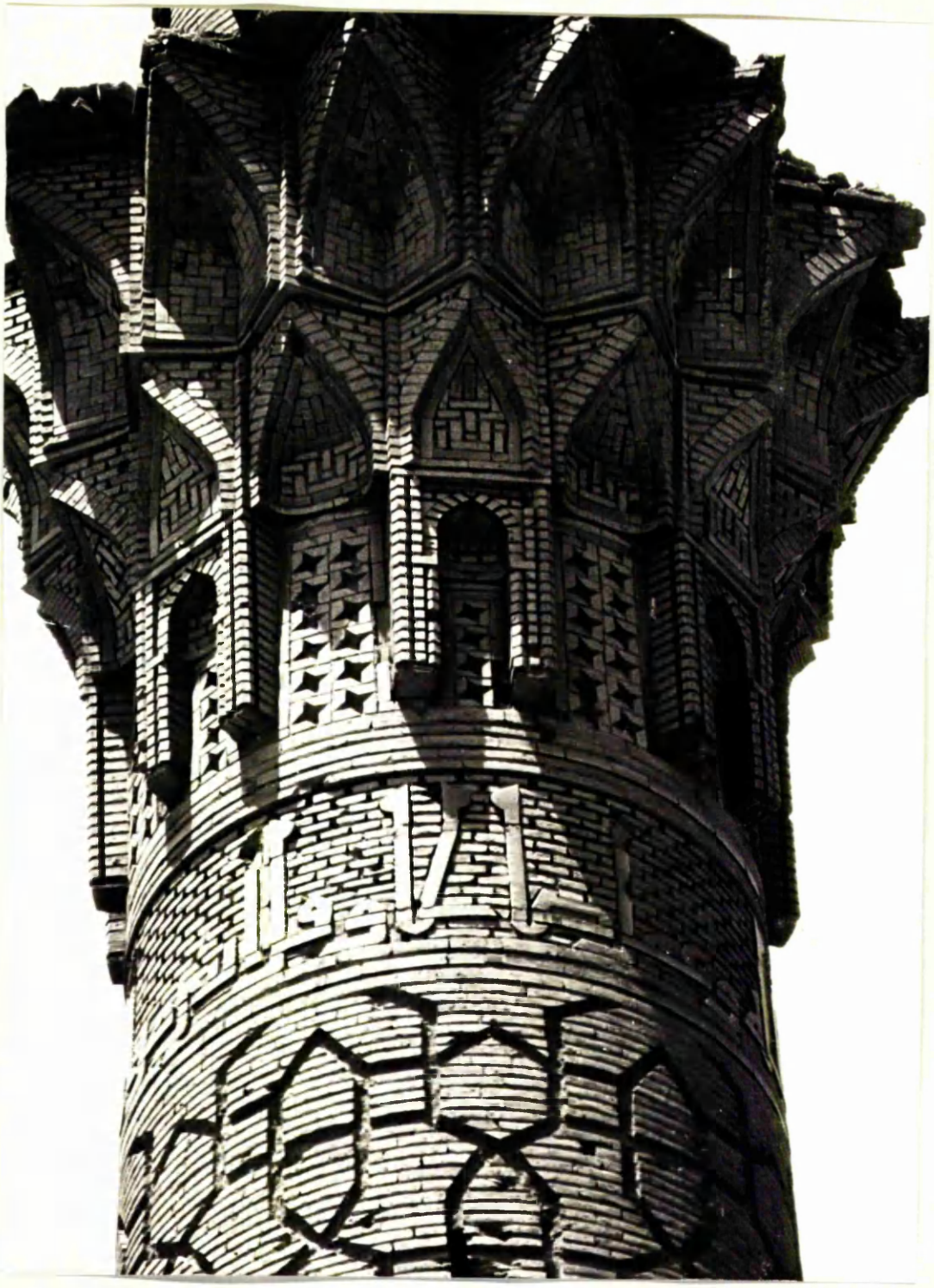
Isfahan - Manār Sarabān



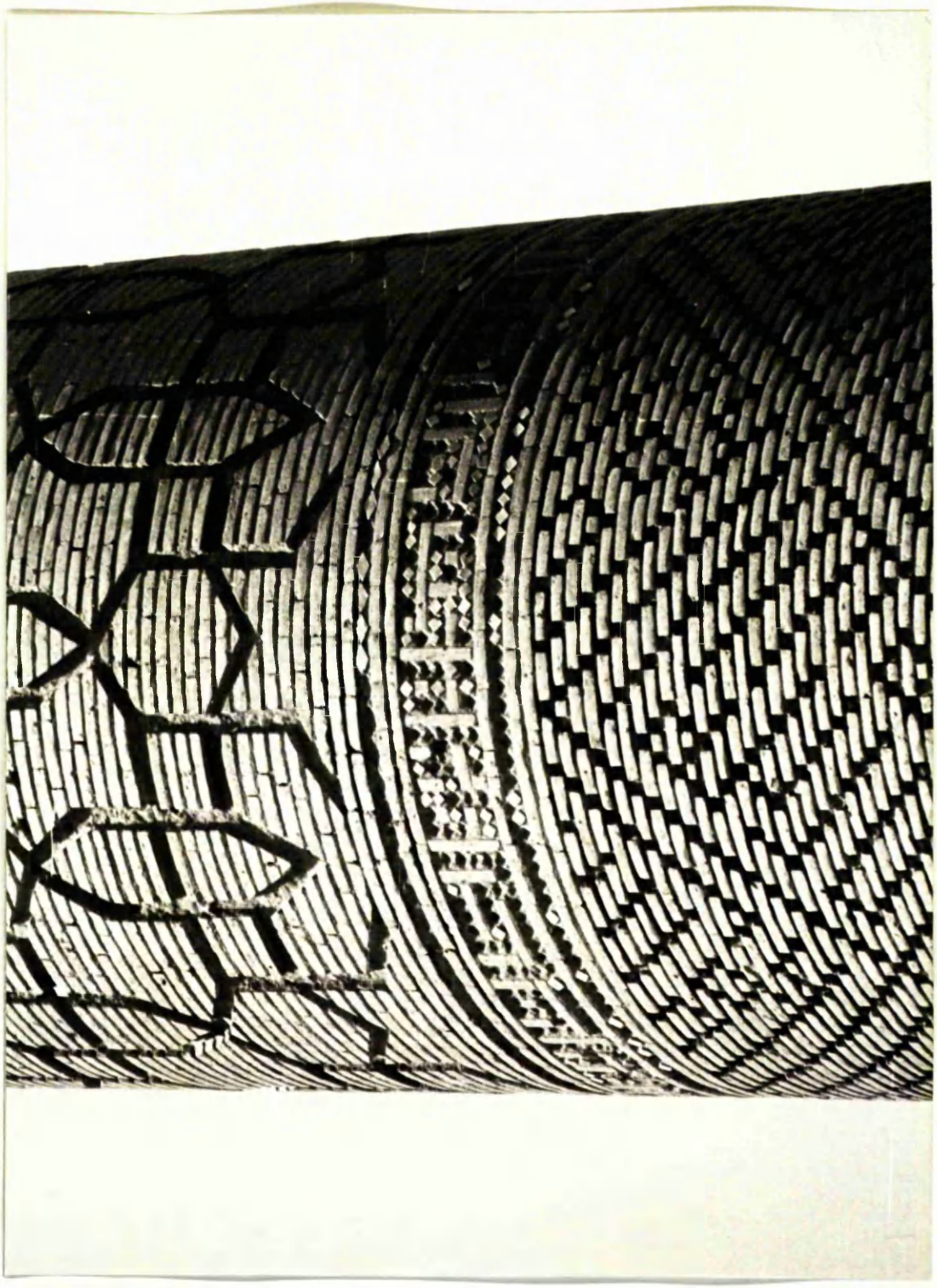
Isfahan - Manār Sarabān



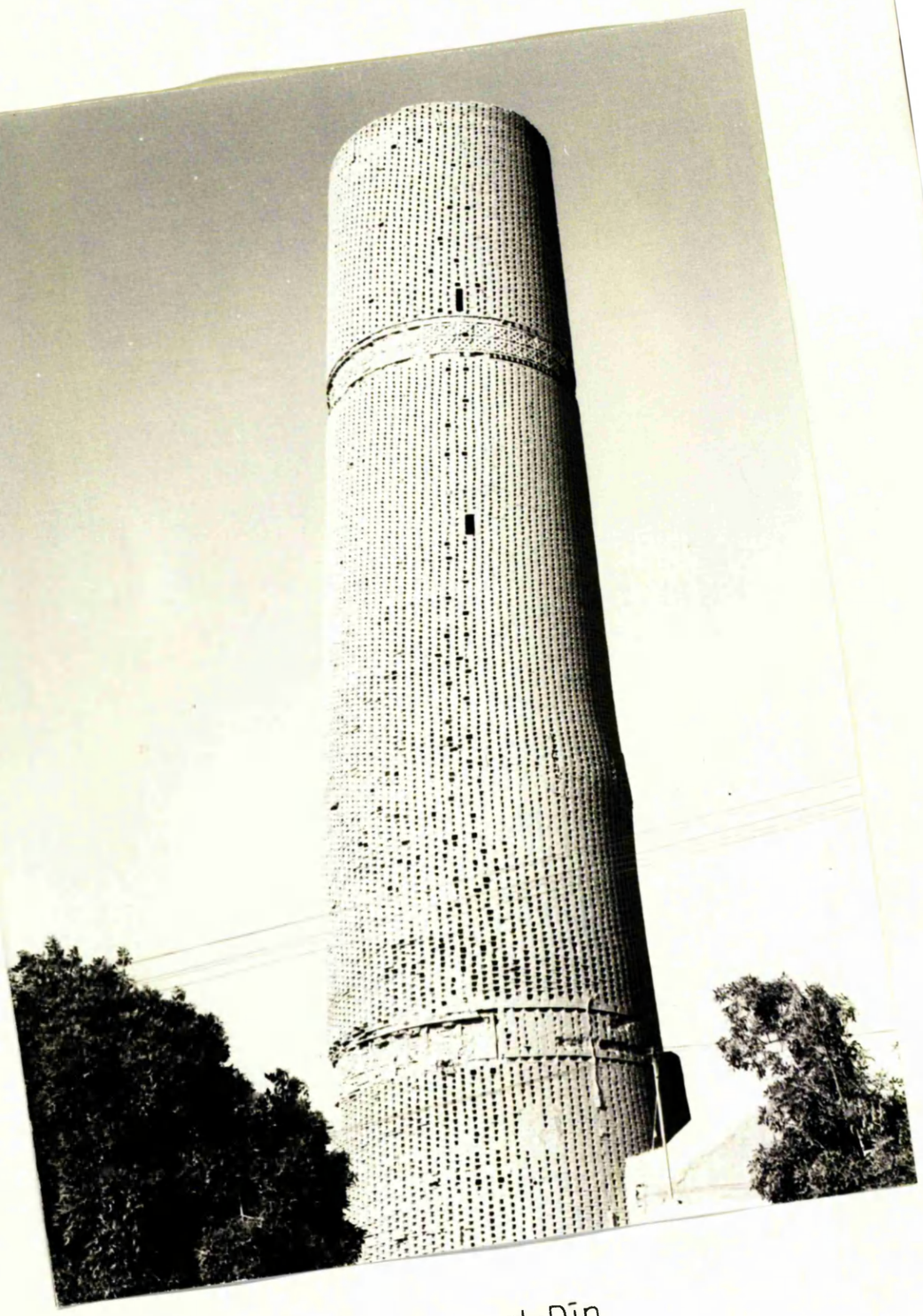
Isfahan - Manār Sarabān



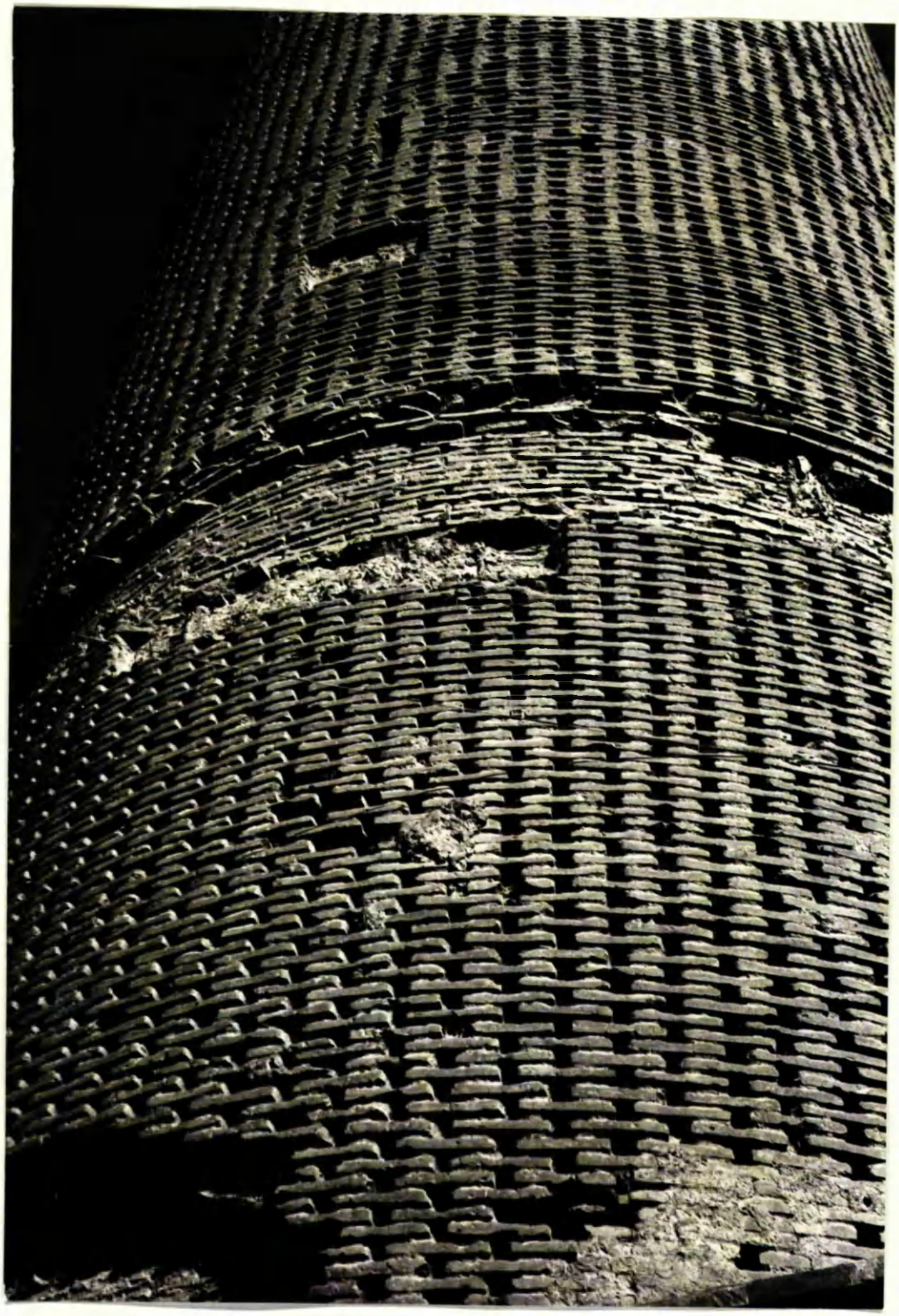
Isfahan - Manār Sarabān



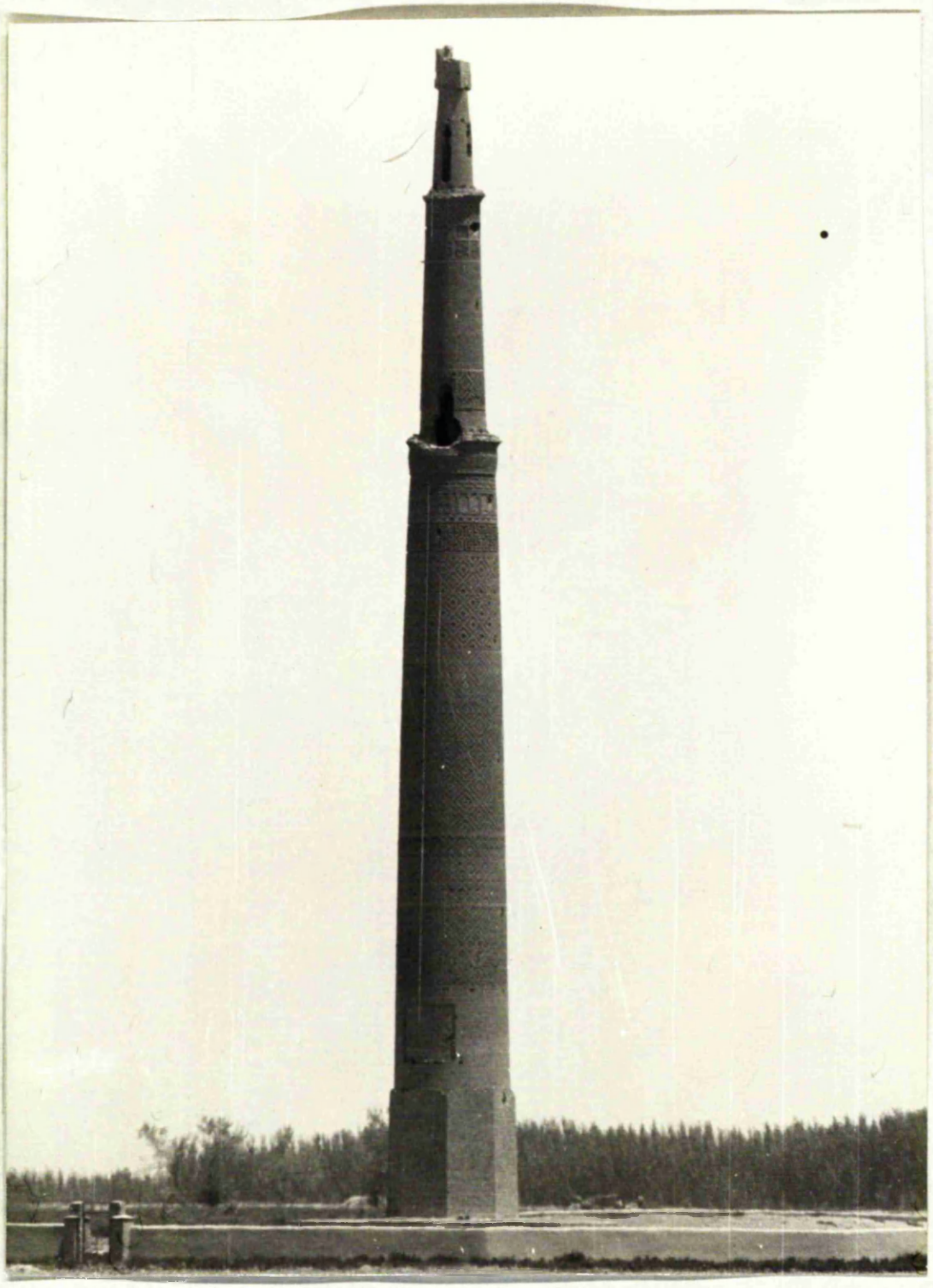
Isfahan - Manār Sarabān



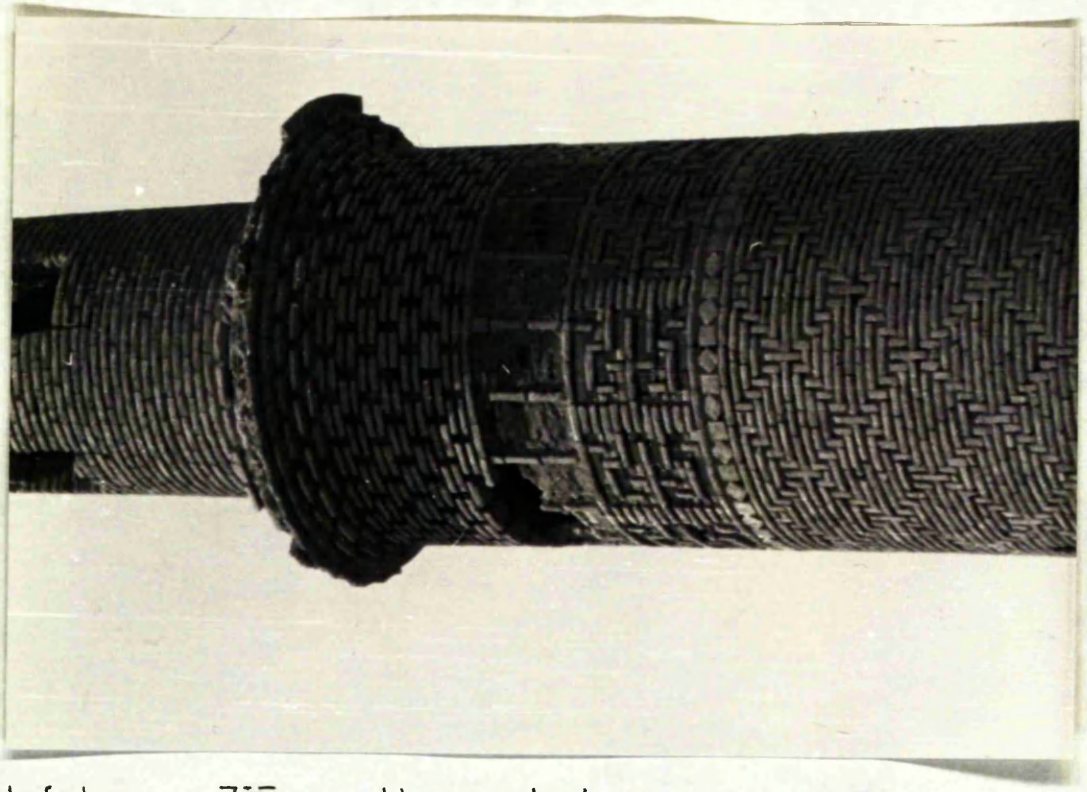
Kāshān - Manār-i Zayn al-Dīn



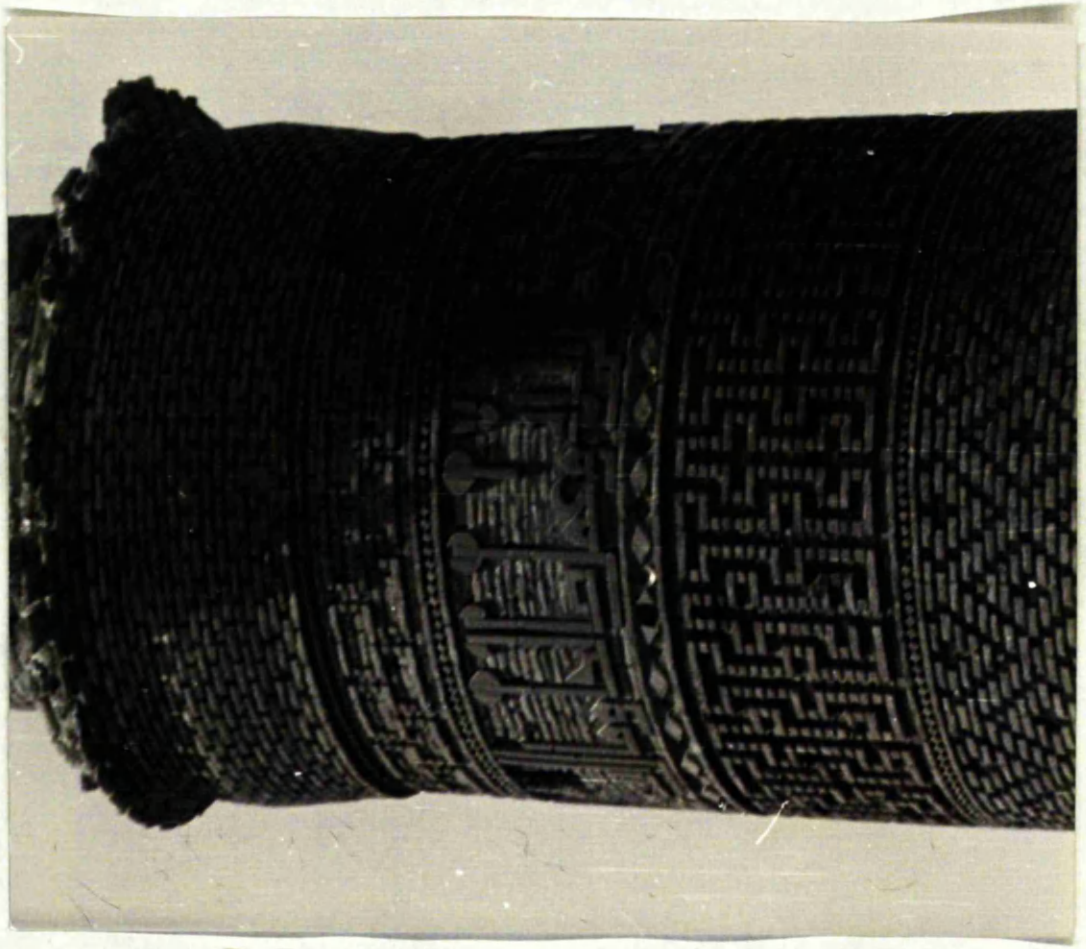
Kāshān - Manār-i Zayn al-Dīn



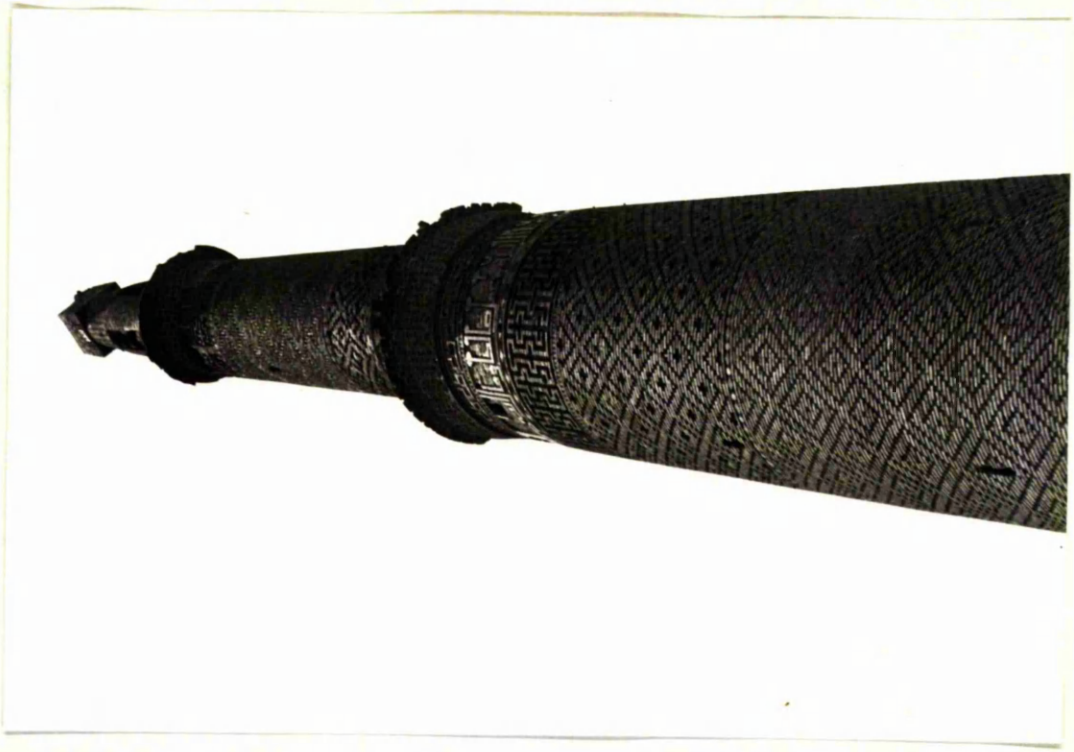
Isfahan - Zīār



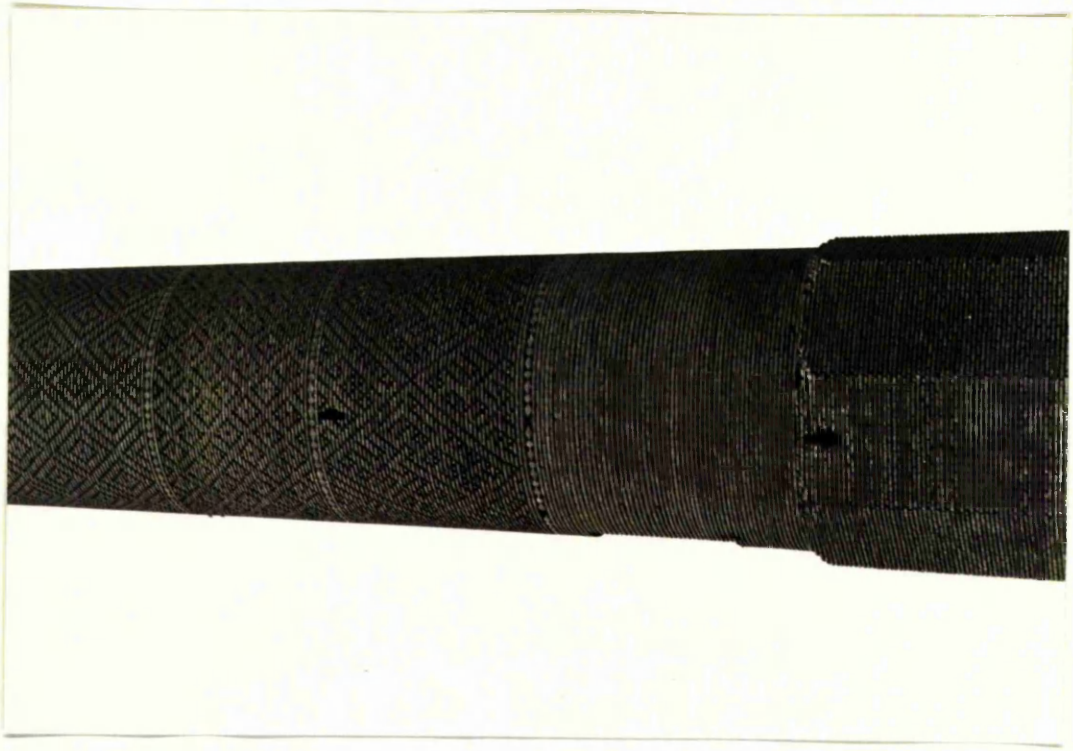
Isfahan - Zīār. Upper balcony



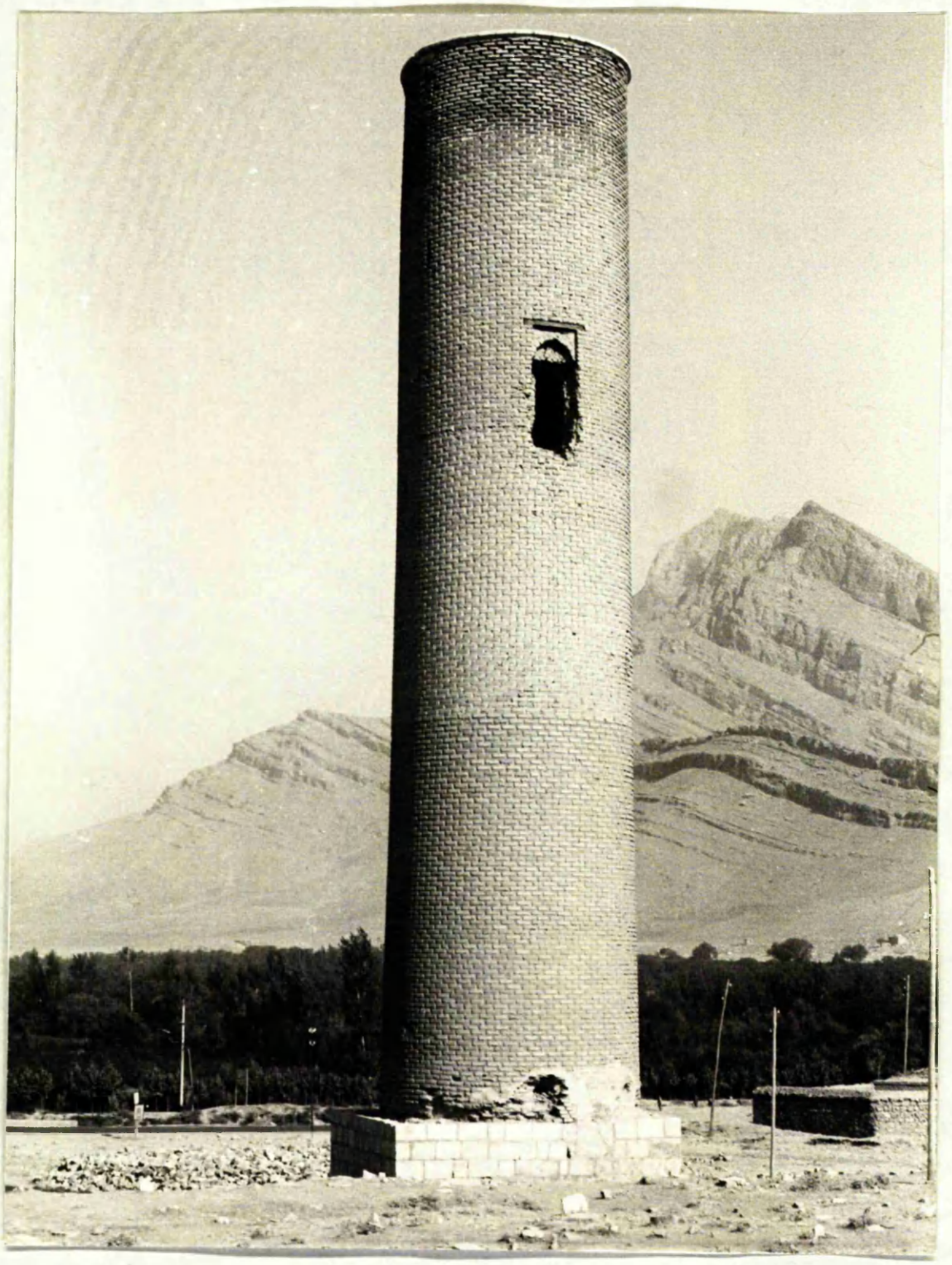
Isfahan - Zīār. Lower balcony and inscription



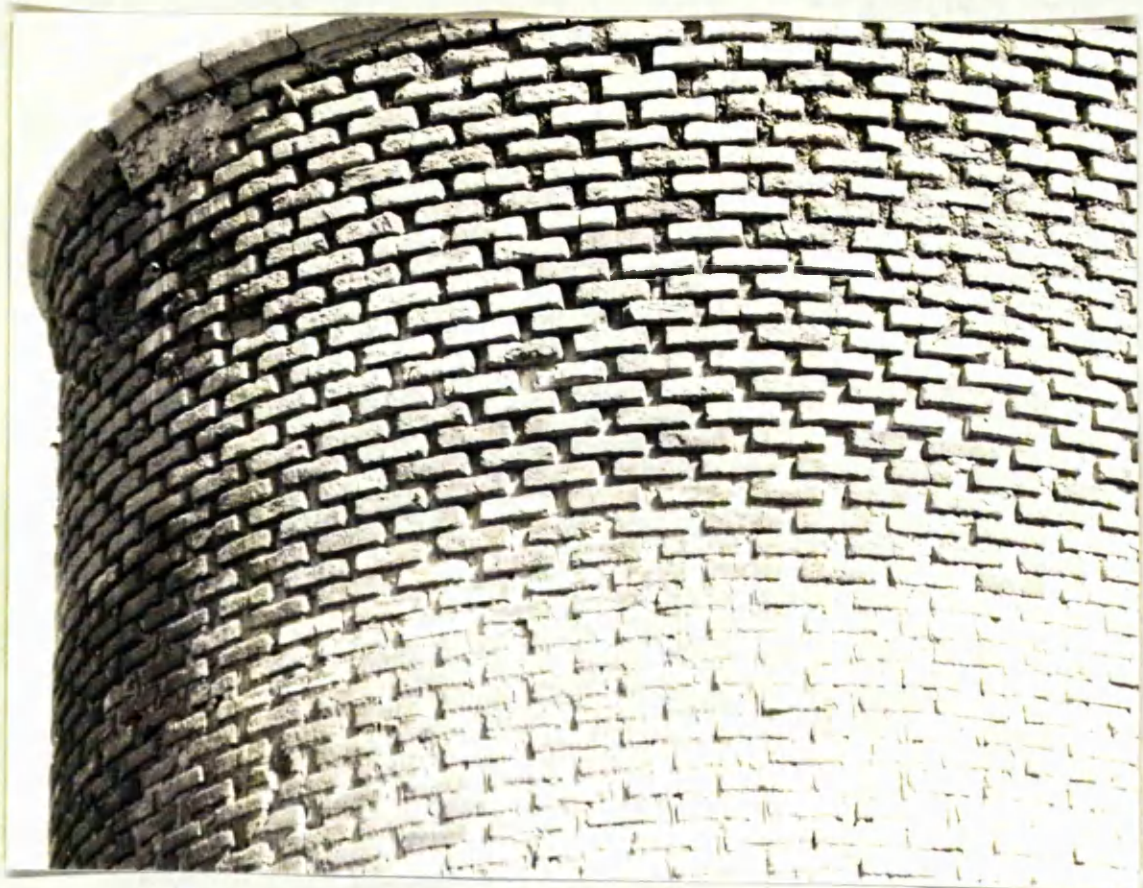
Isfahan - Zīār



Isfahan - Zīār



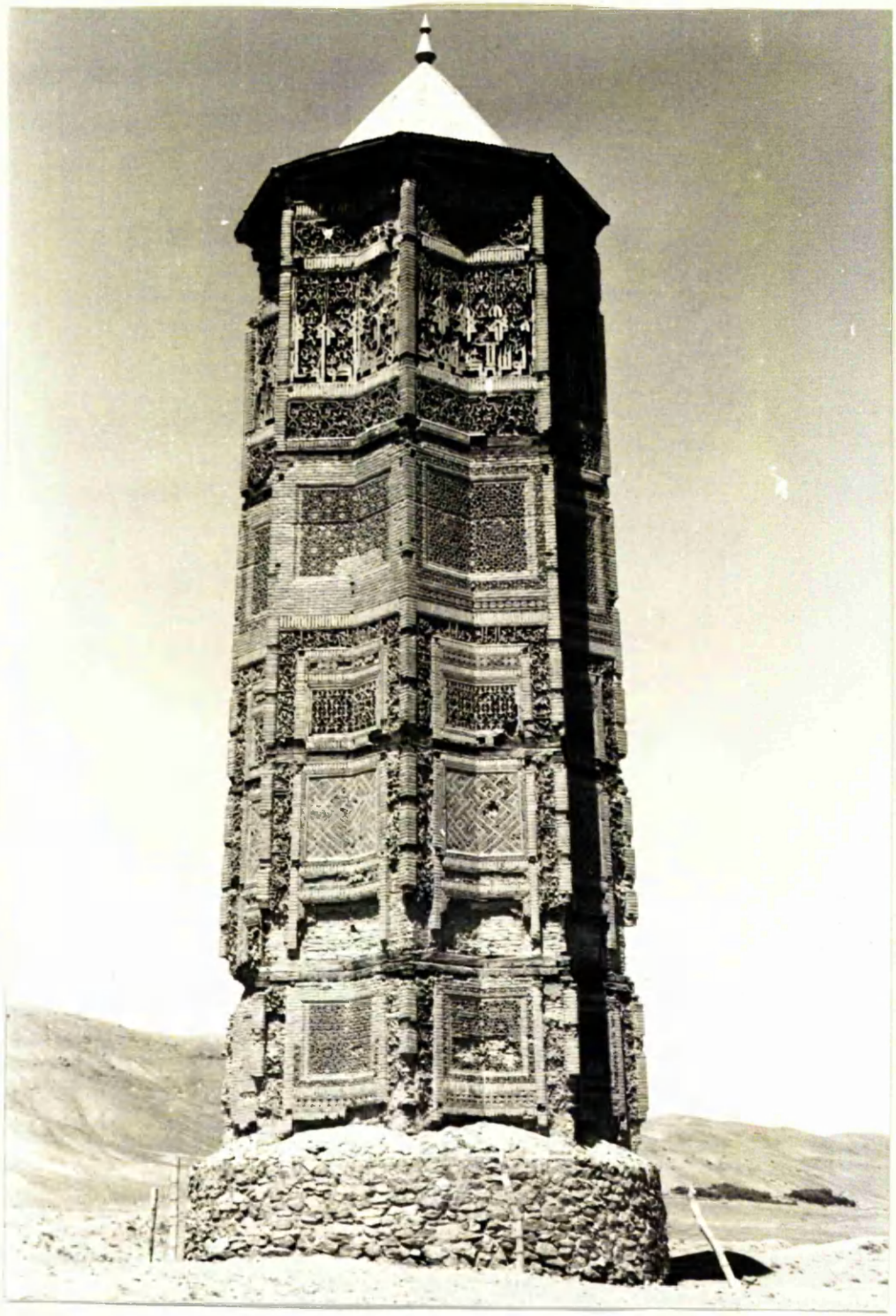
Khurramābād



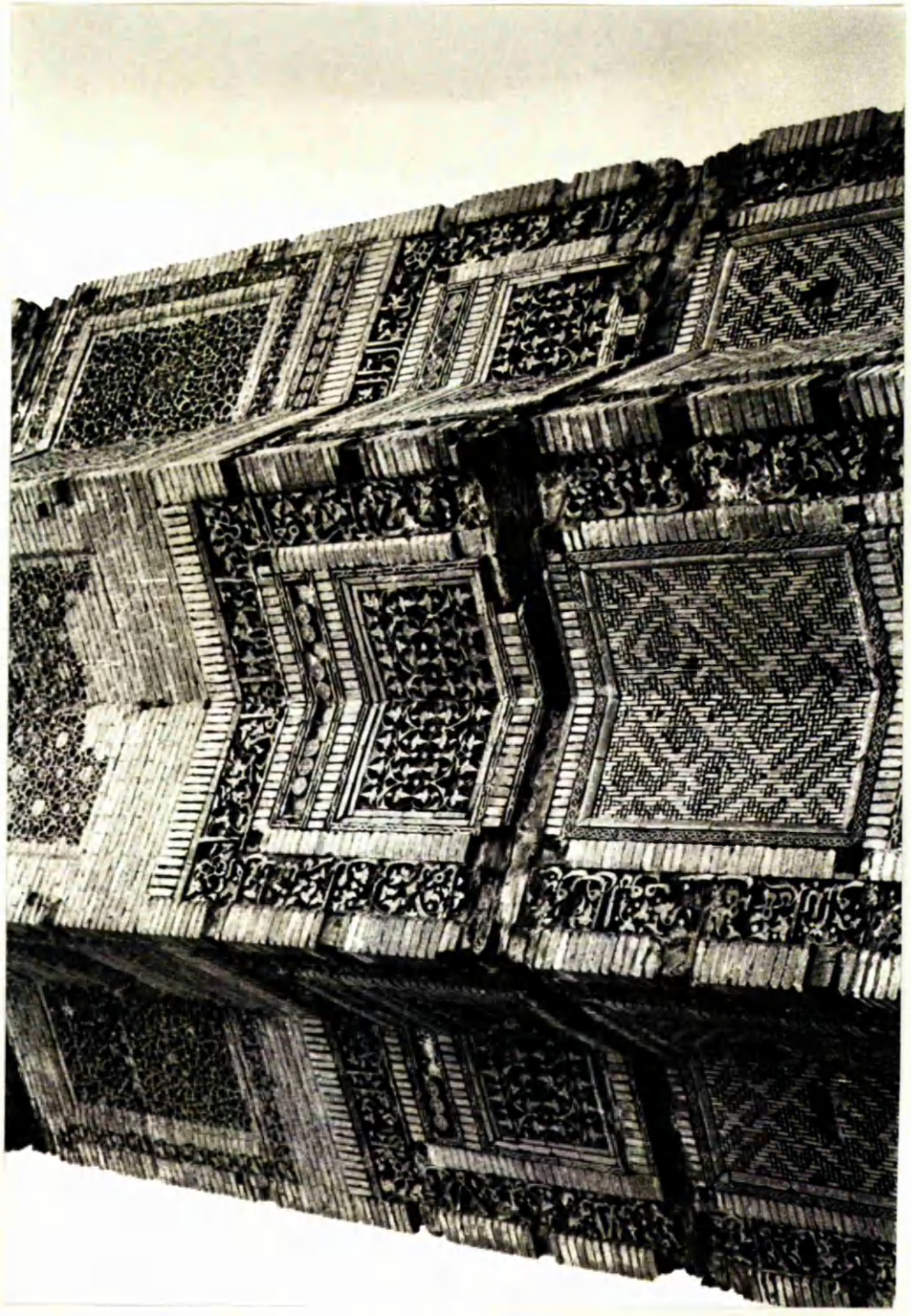
Khurramābād

Khurram ābād

Shūstar - Masjid-i Jāmi'



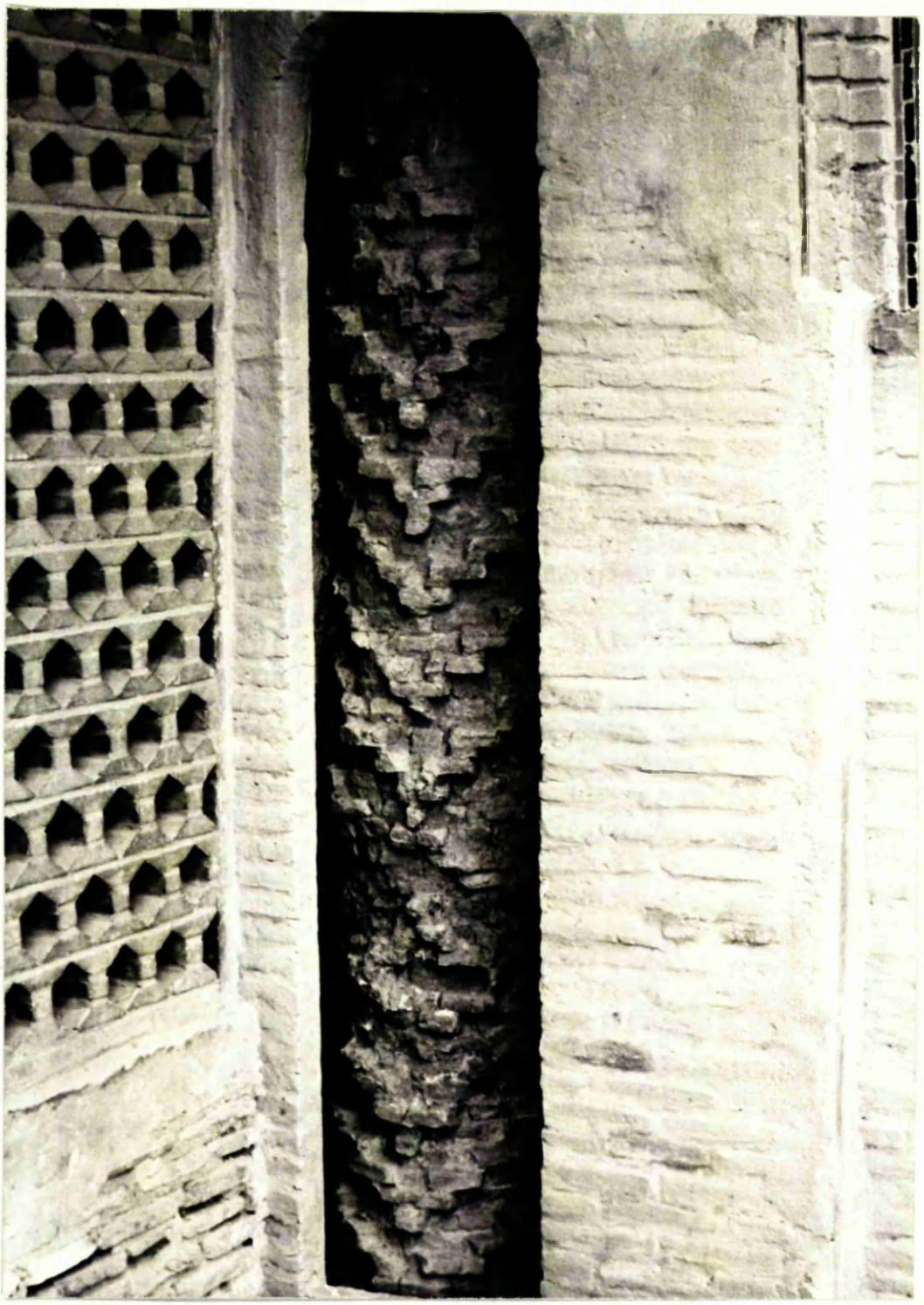
Ghazni - Tower of Mas'ūd III



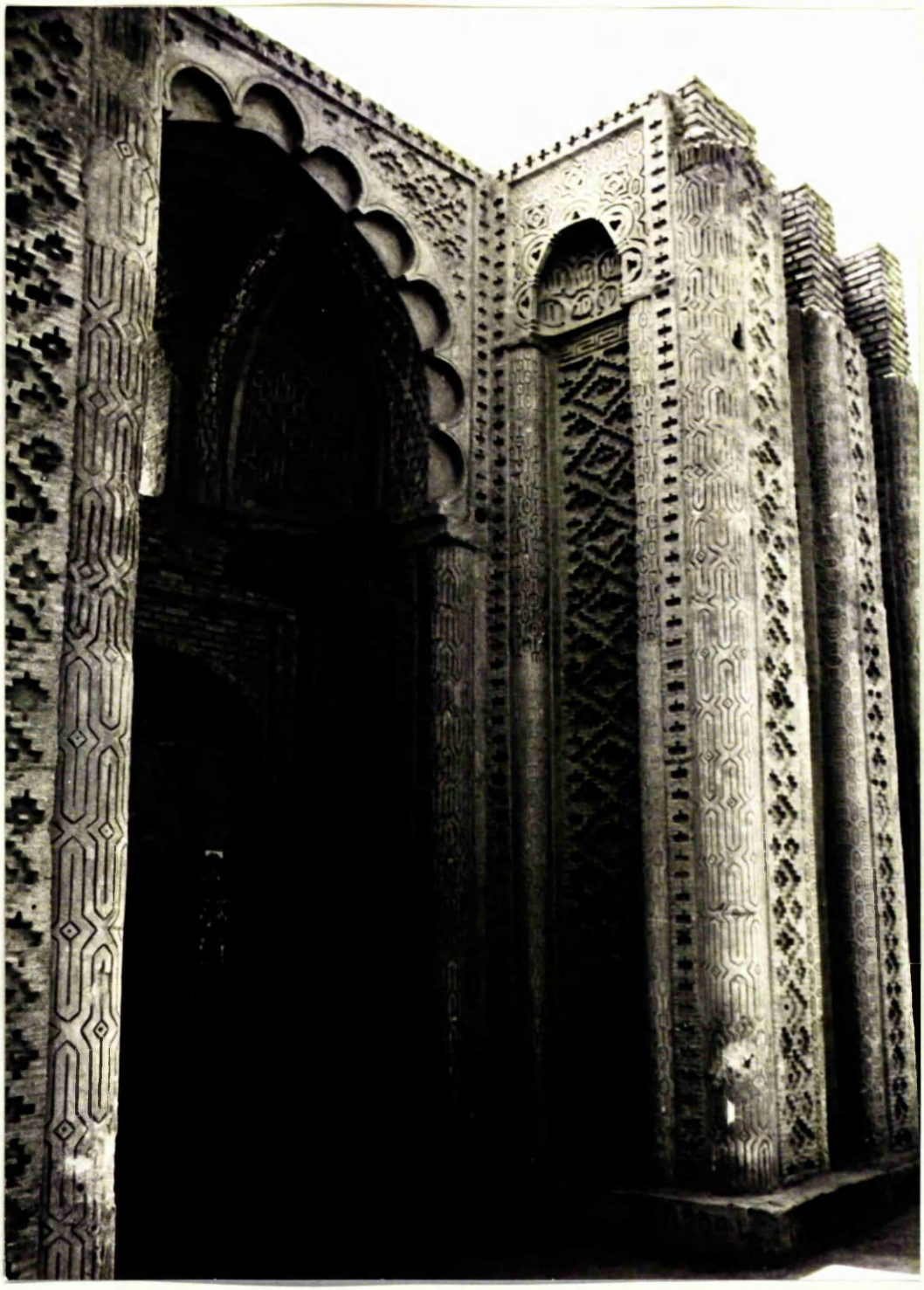
Ghazni - Tower of Mas'ūd III

Ghazni - Tower of Bahrāmshāh

Ghazni - Tower of Bahrāmshāh

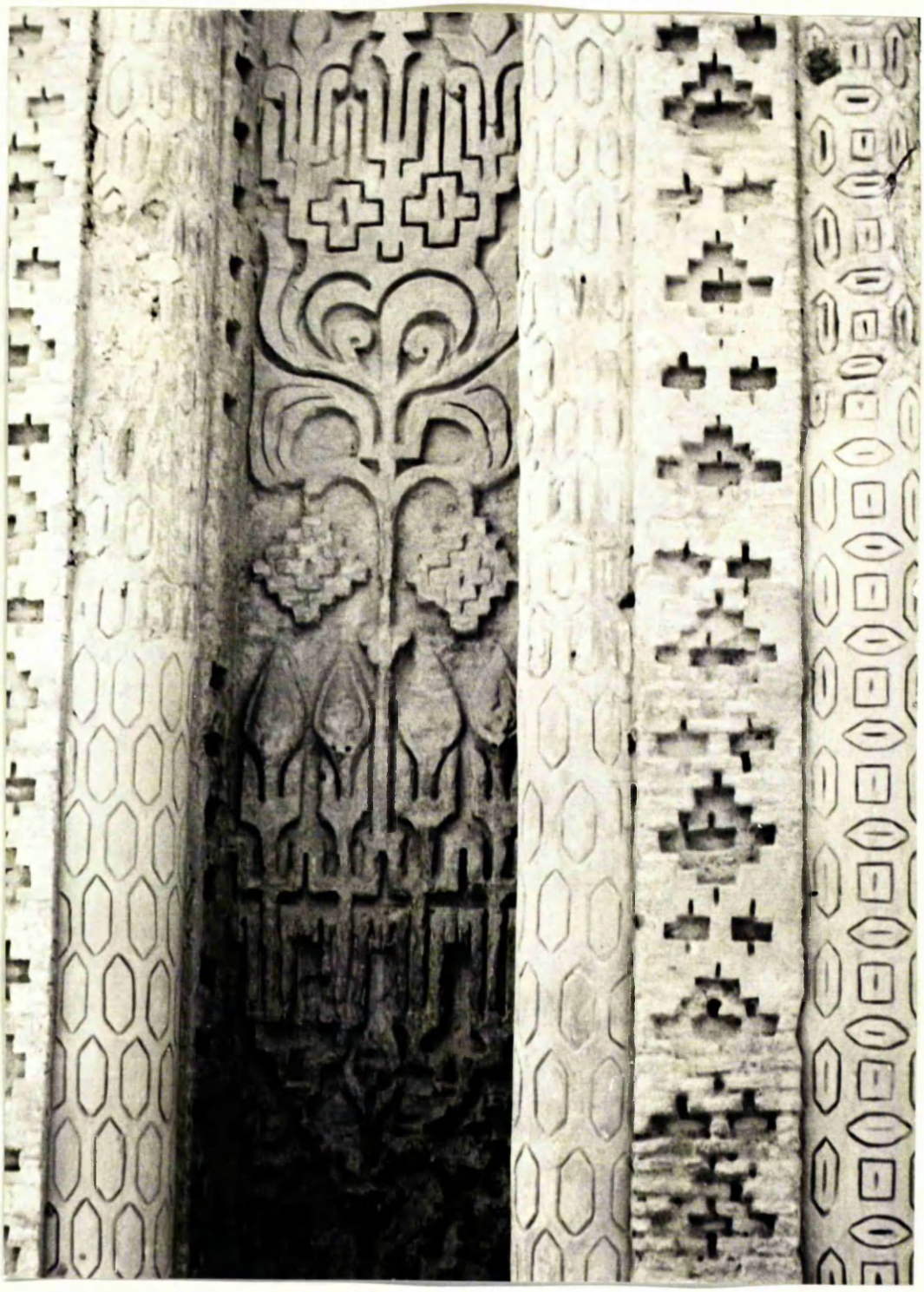


Isfahan – Masjid-i Jāmi'. Būyid column

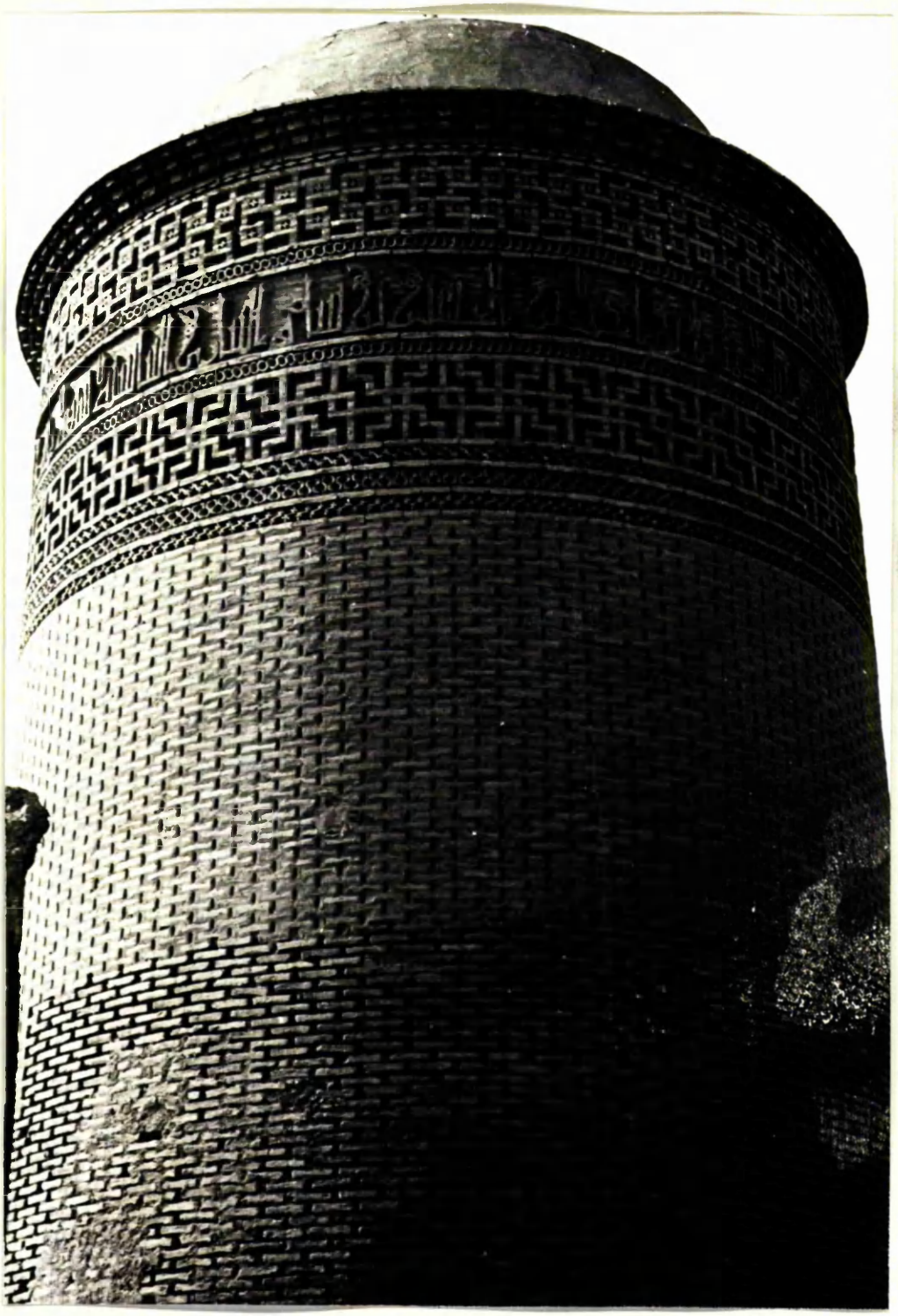


Isfahan – Jurjīr portal

Isfahan - Jurjīr portal

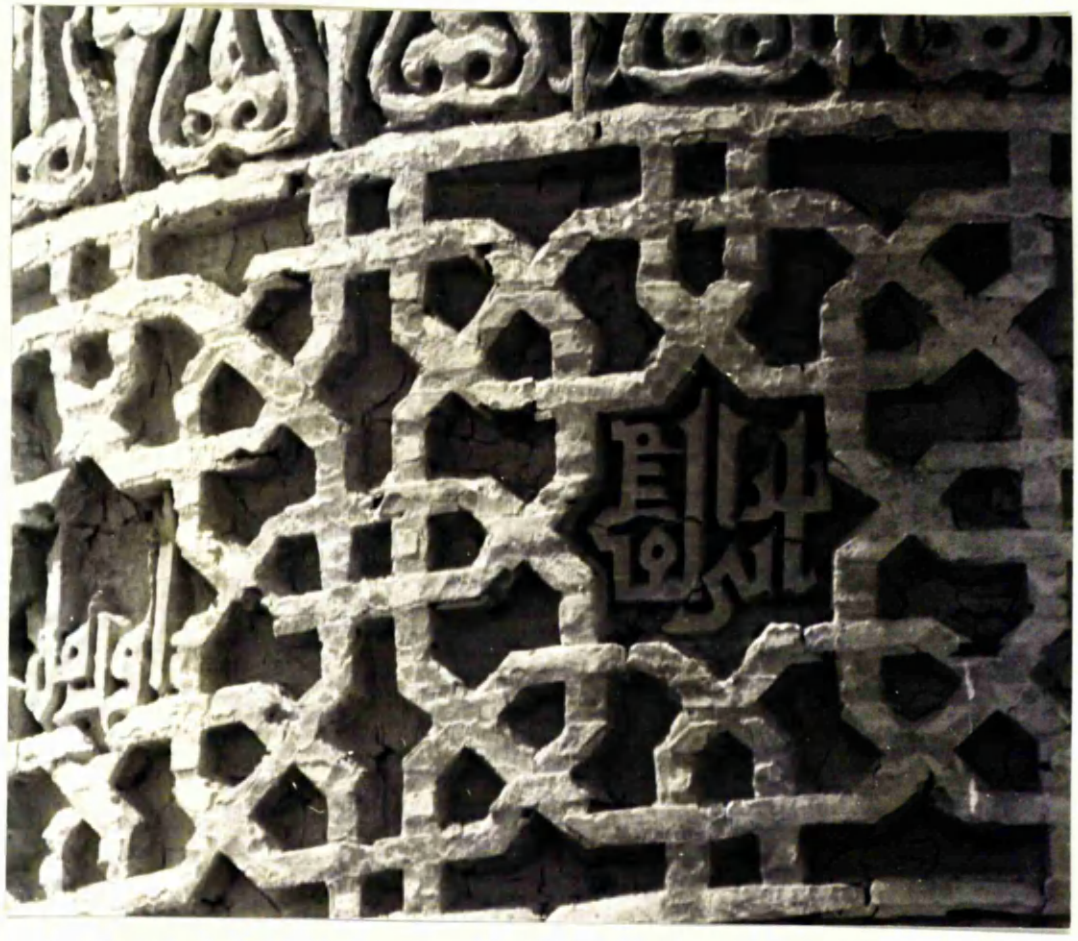


Isfahan – Jurjīr portal

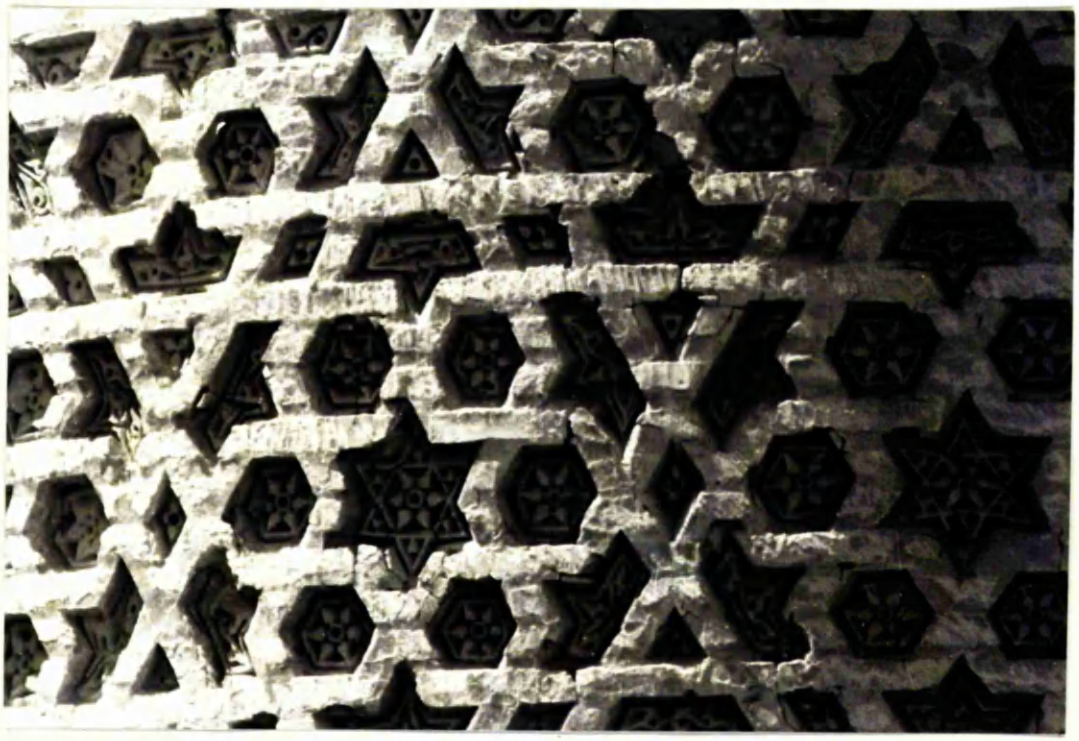


Dāmghān - Pīr-i 'Alamdār

Dawlatābād - Minaret



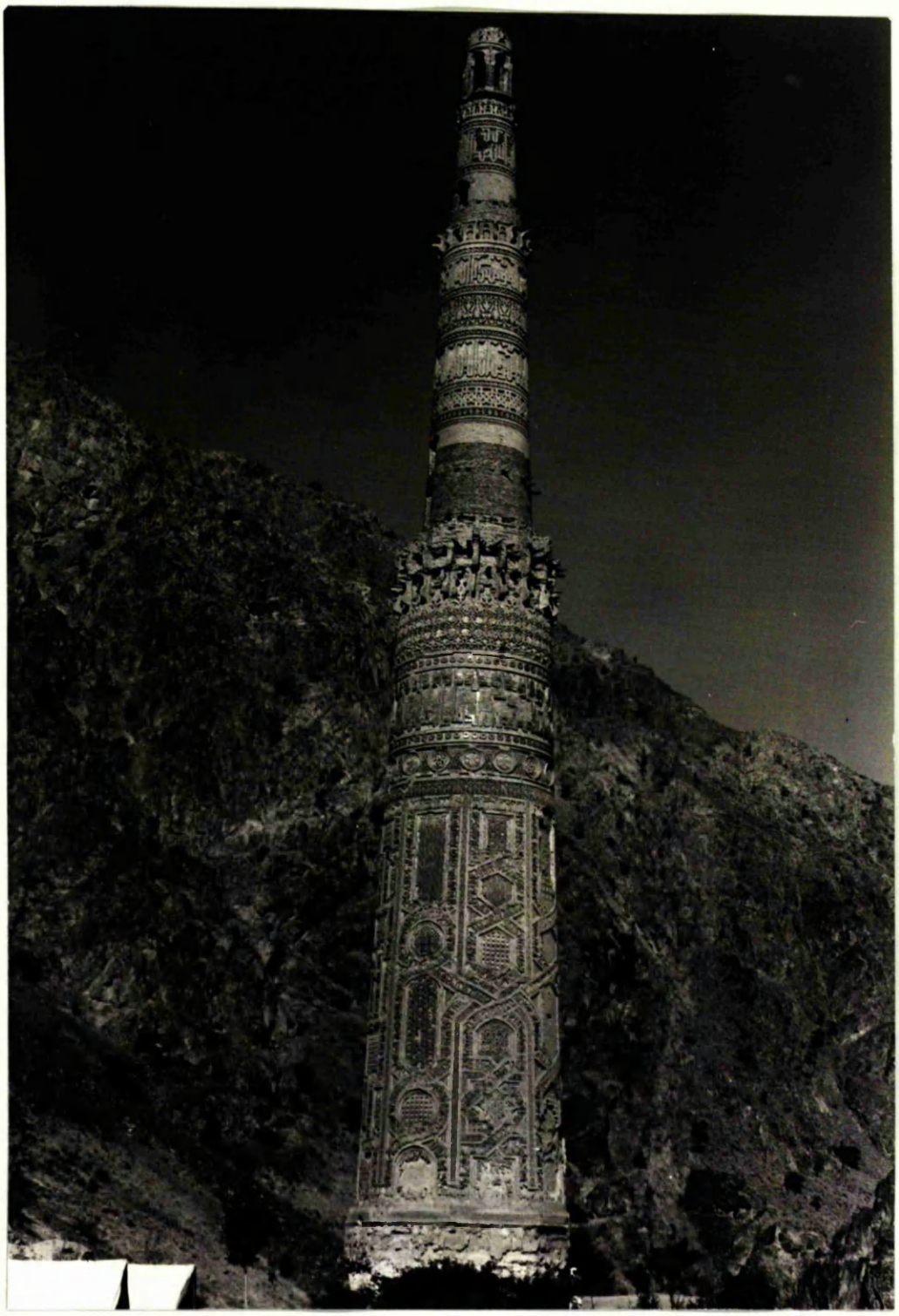
Dawlatābād



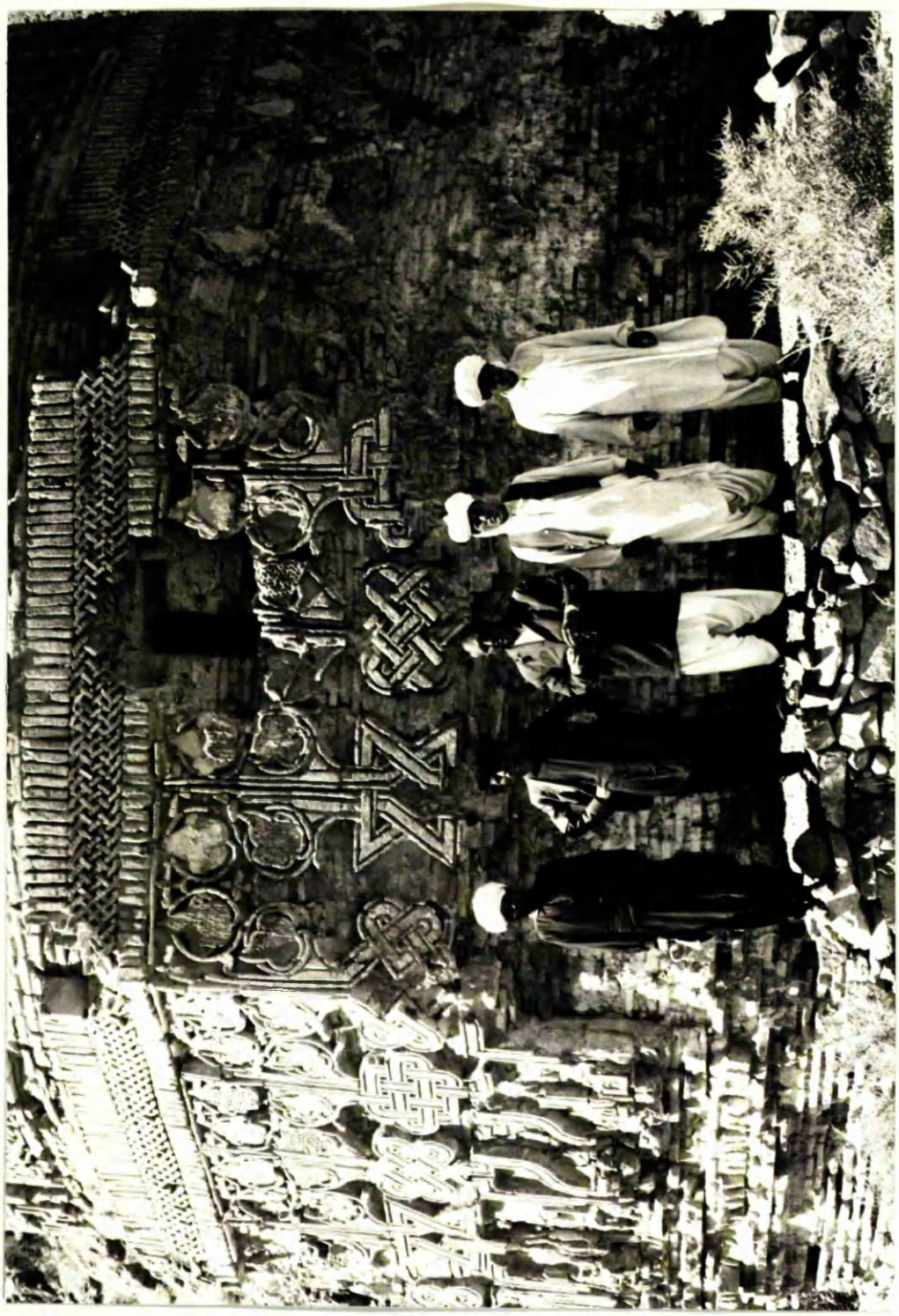
Dawlatābād

Dawlatābād

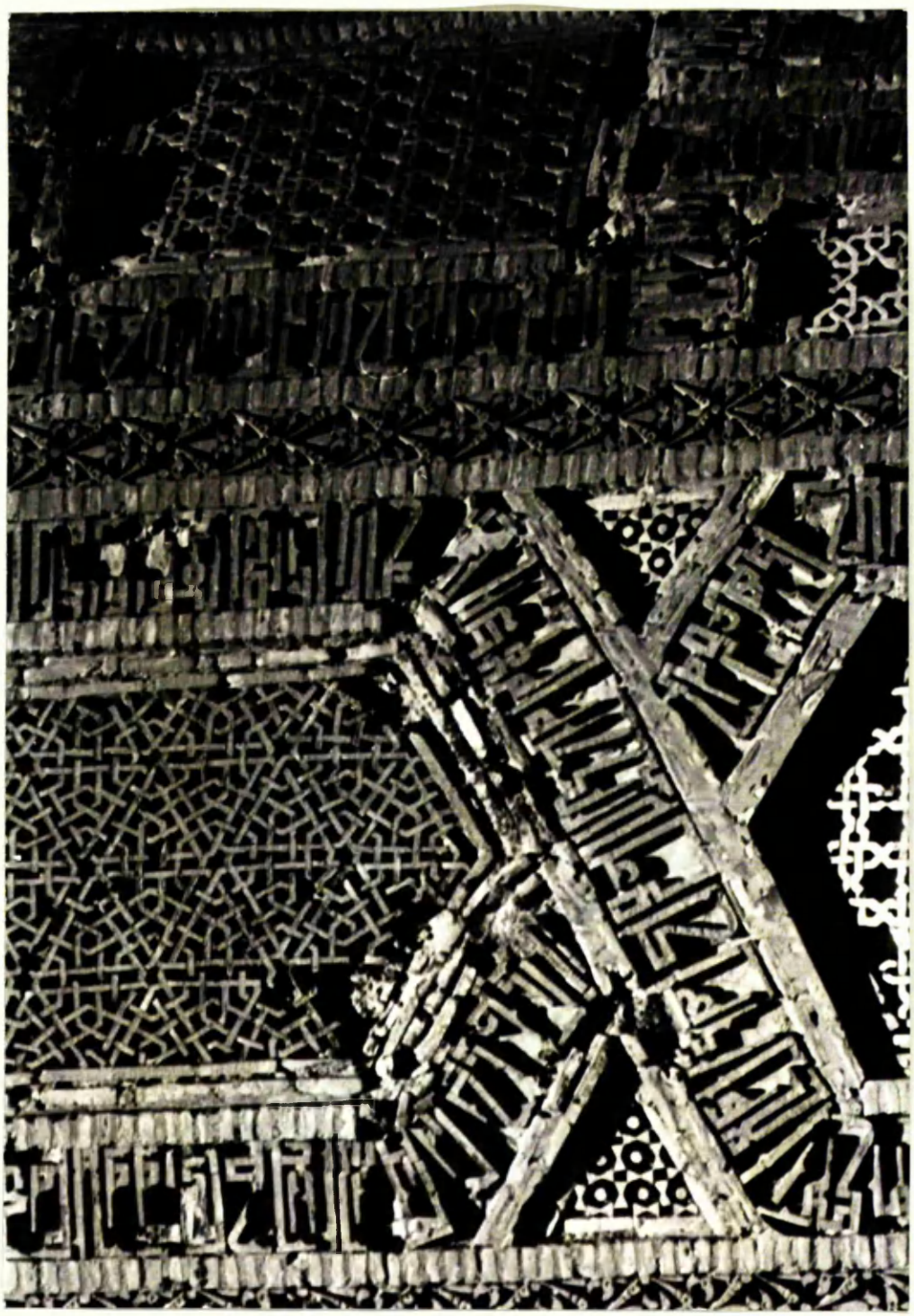
Dawlatābād



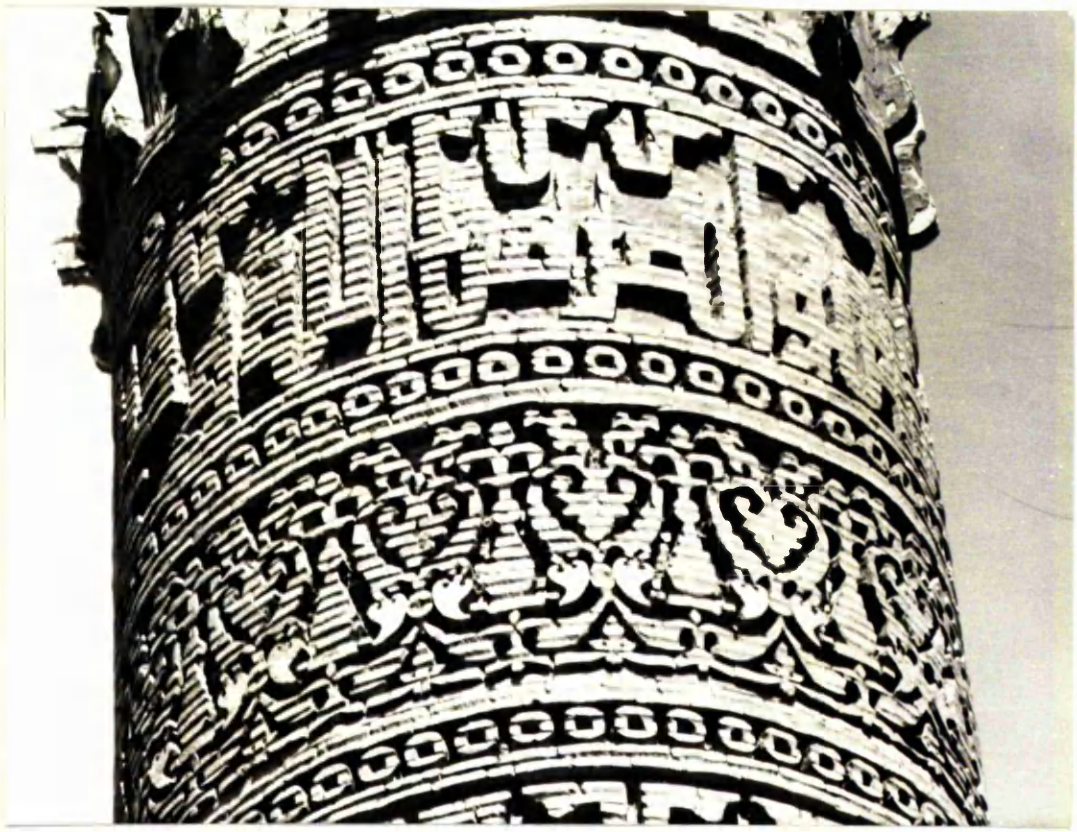
Jām



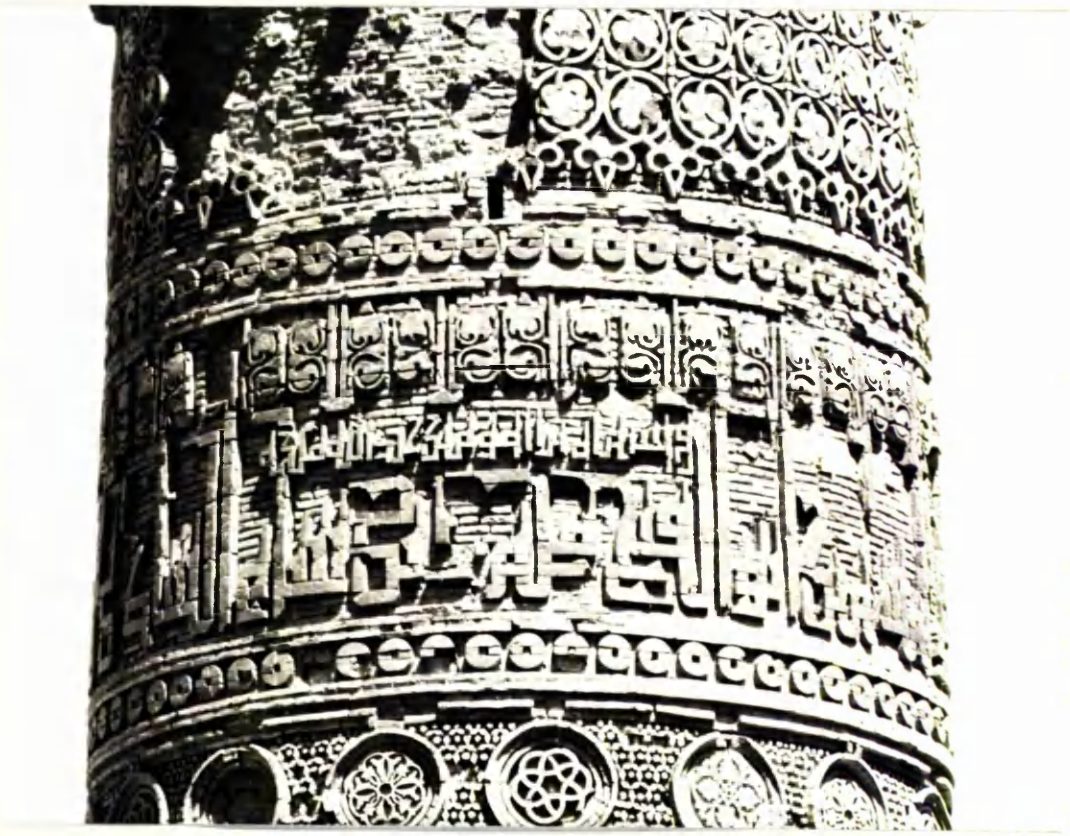
Jām. Base inscription



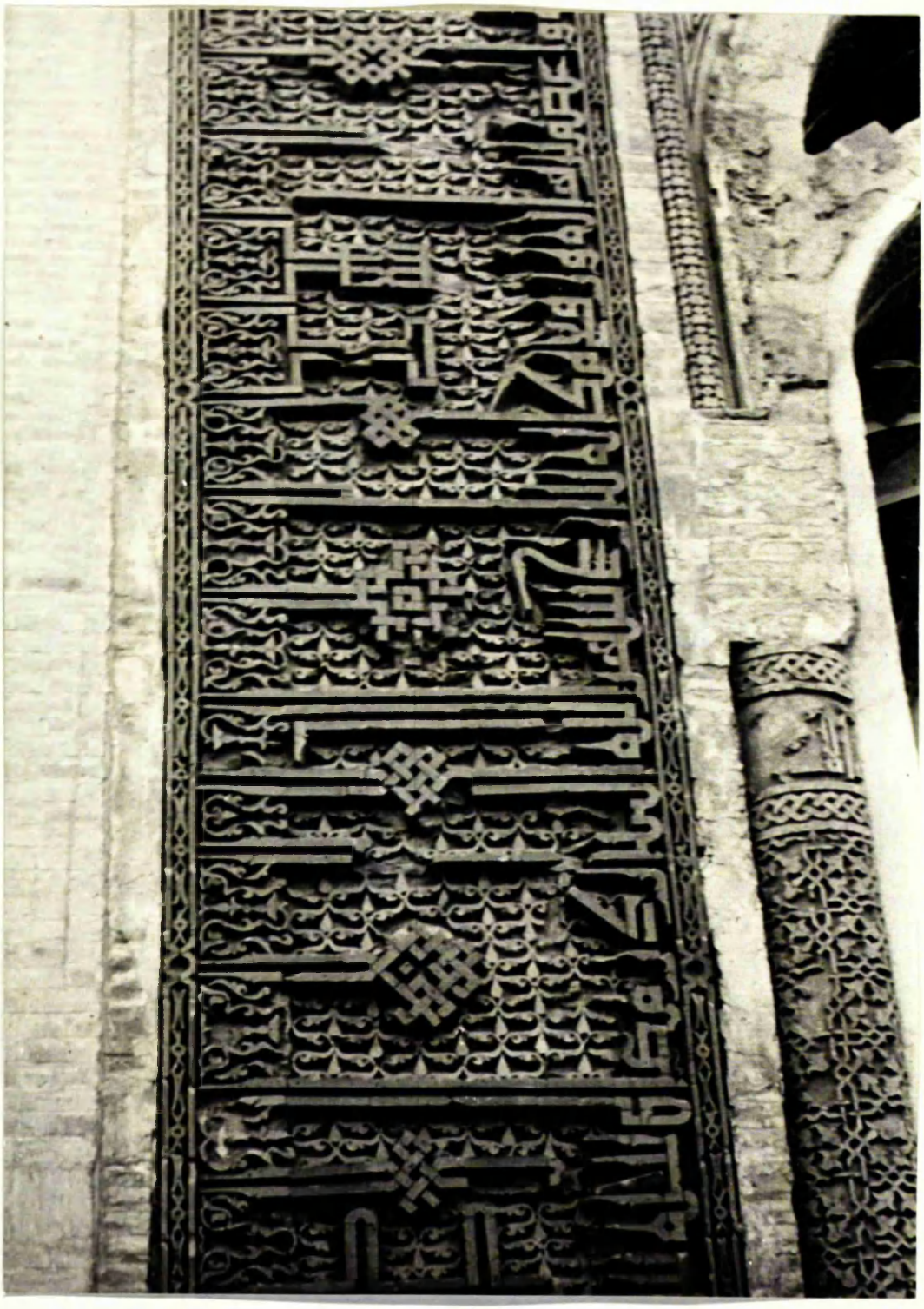
Jām. Qurʾānic inscription



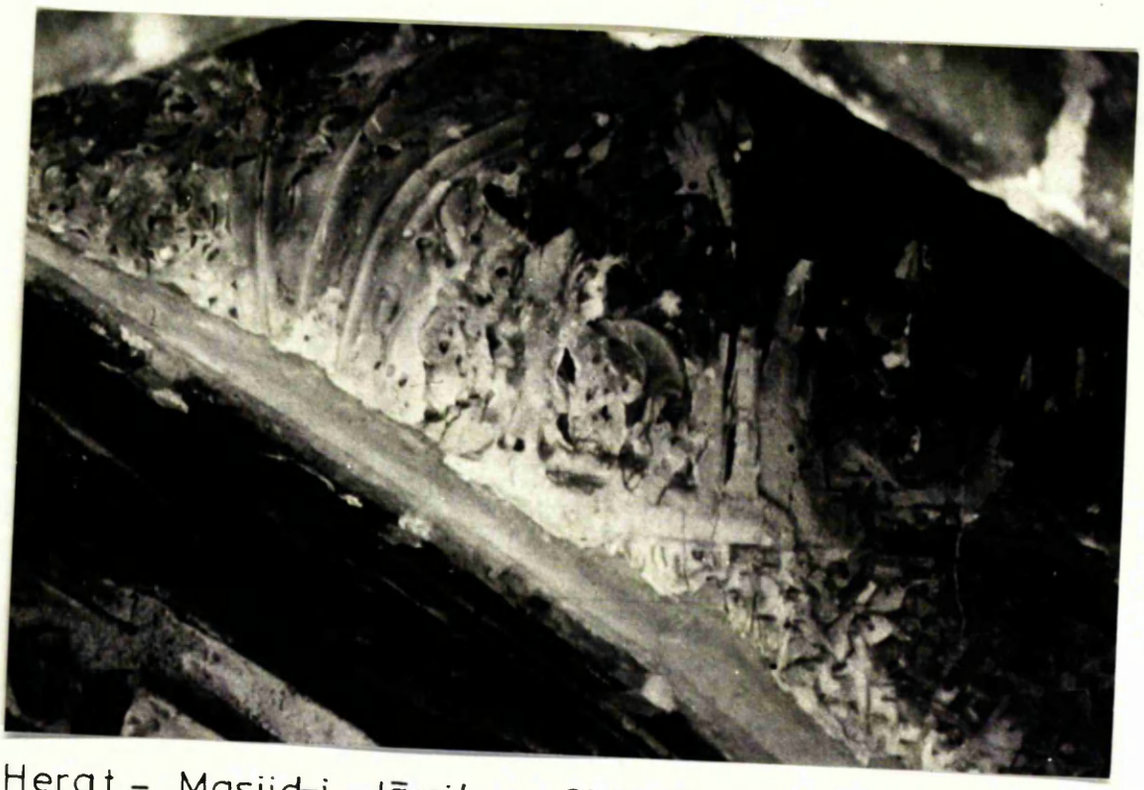
Jām. Upper pattern detail



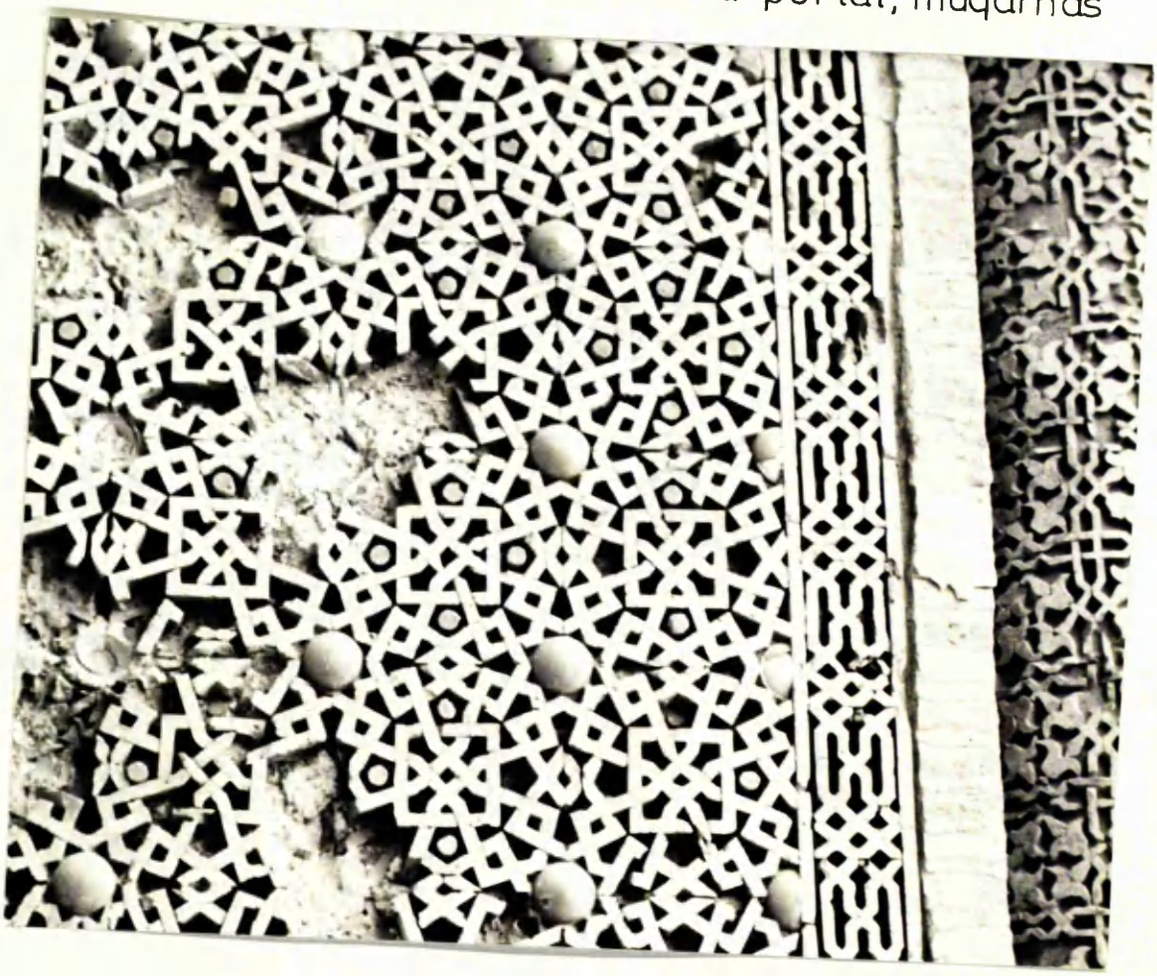
Jām. Foundation inscription



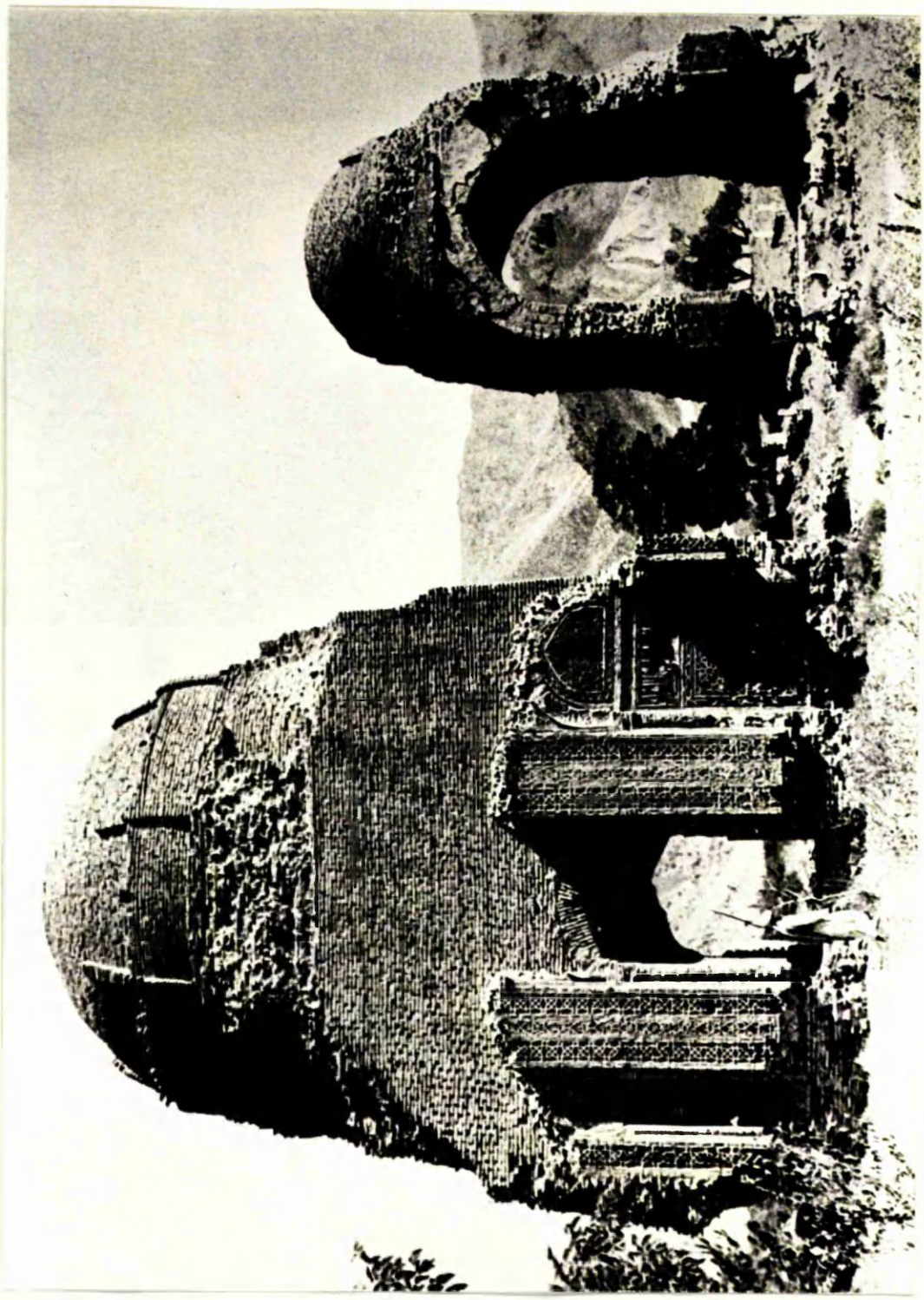
Herat - Masjid-i Jāmi'. Ghūrid portal



Herat - Masjid-i Jāmi'. Ghūrid portal, muqarnas

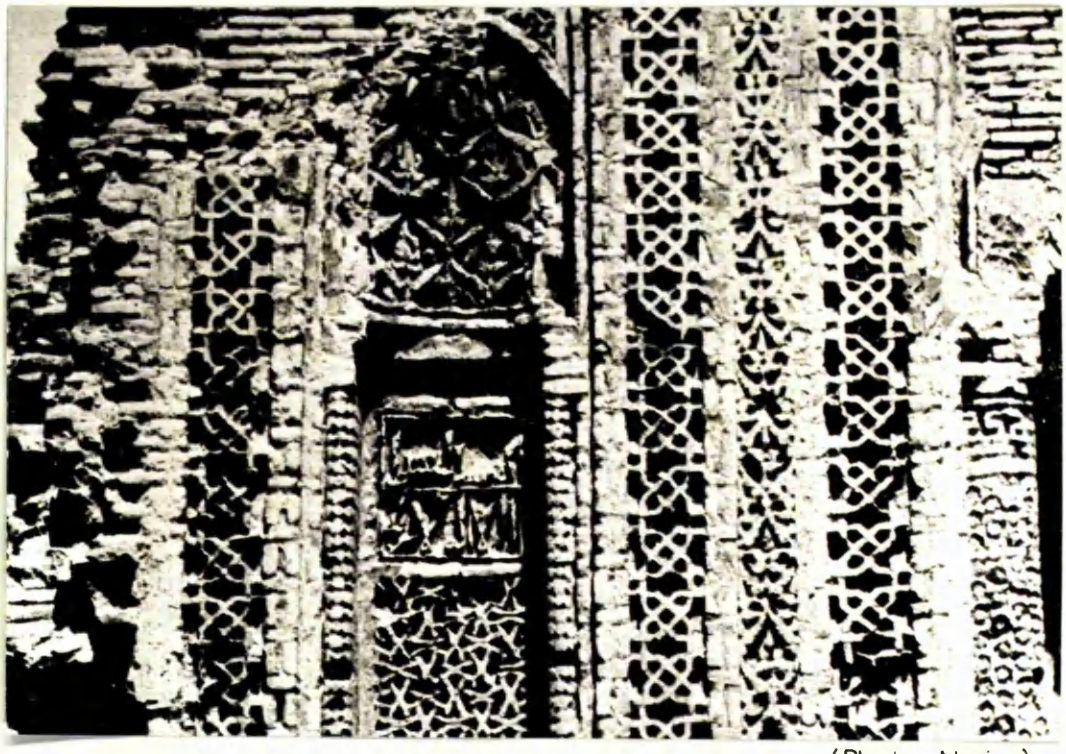


Herat - Masjid-i Jāmi'. Ghūrid portal



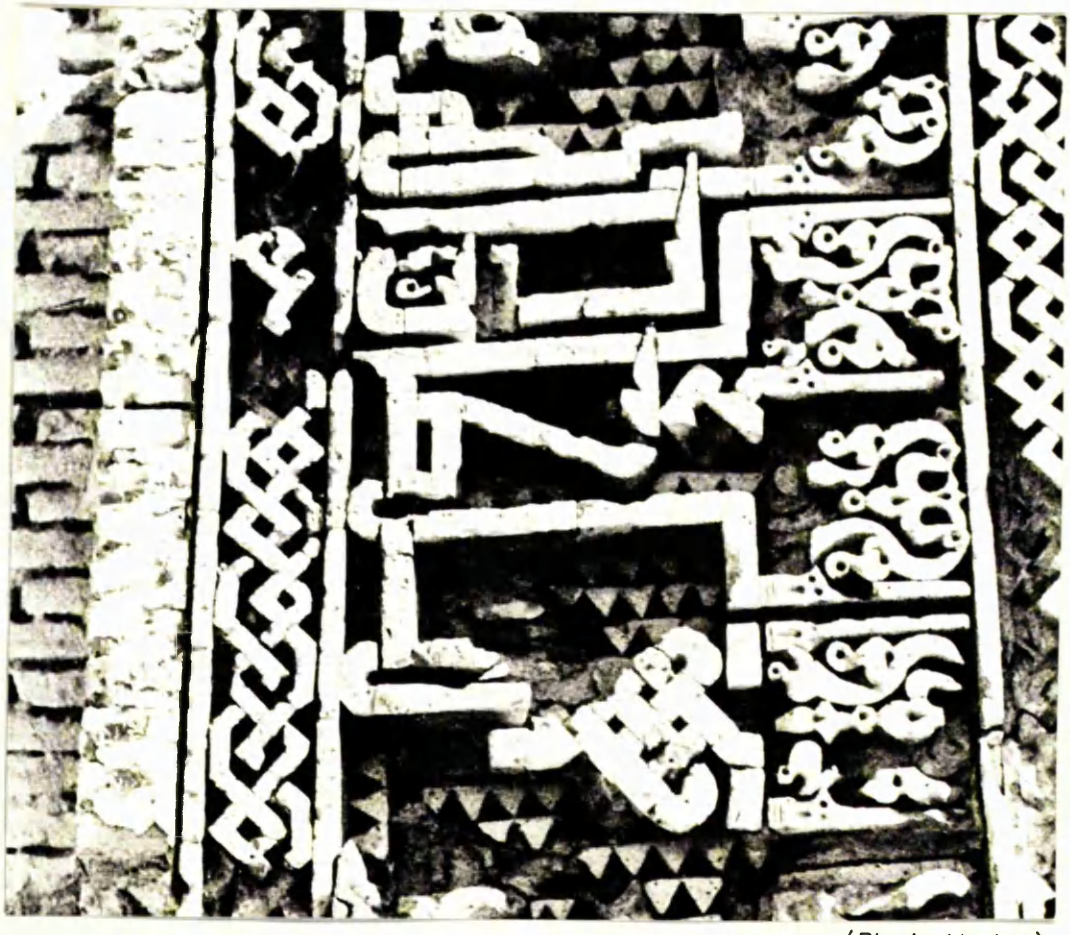
(Photo. Maricq)

Chisht



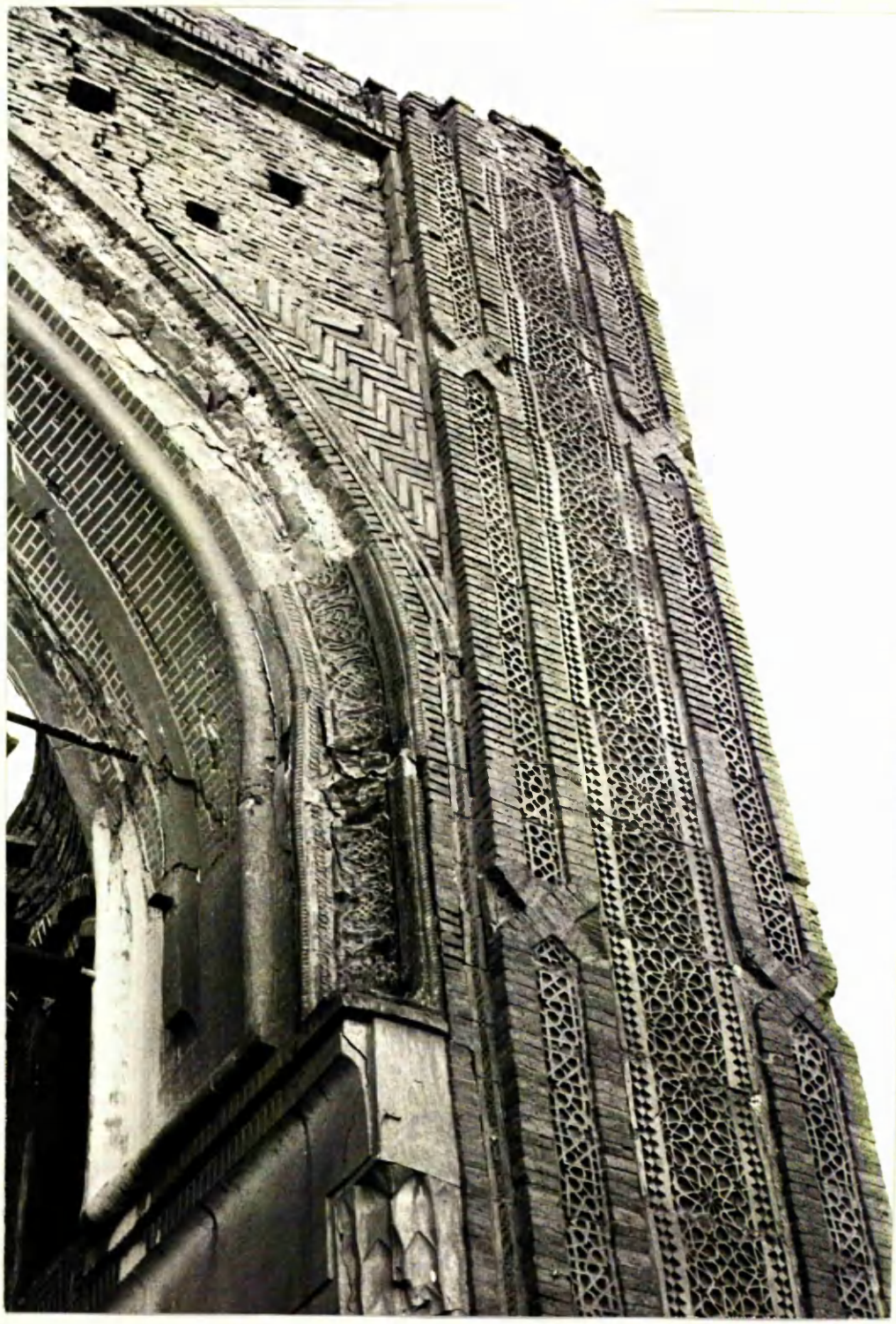
(Photo. Maricq)

Chisht. Decoration on larger mausoleum

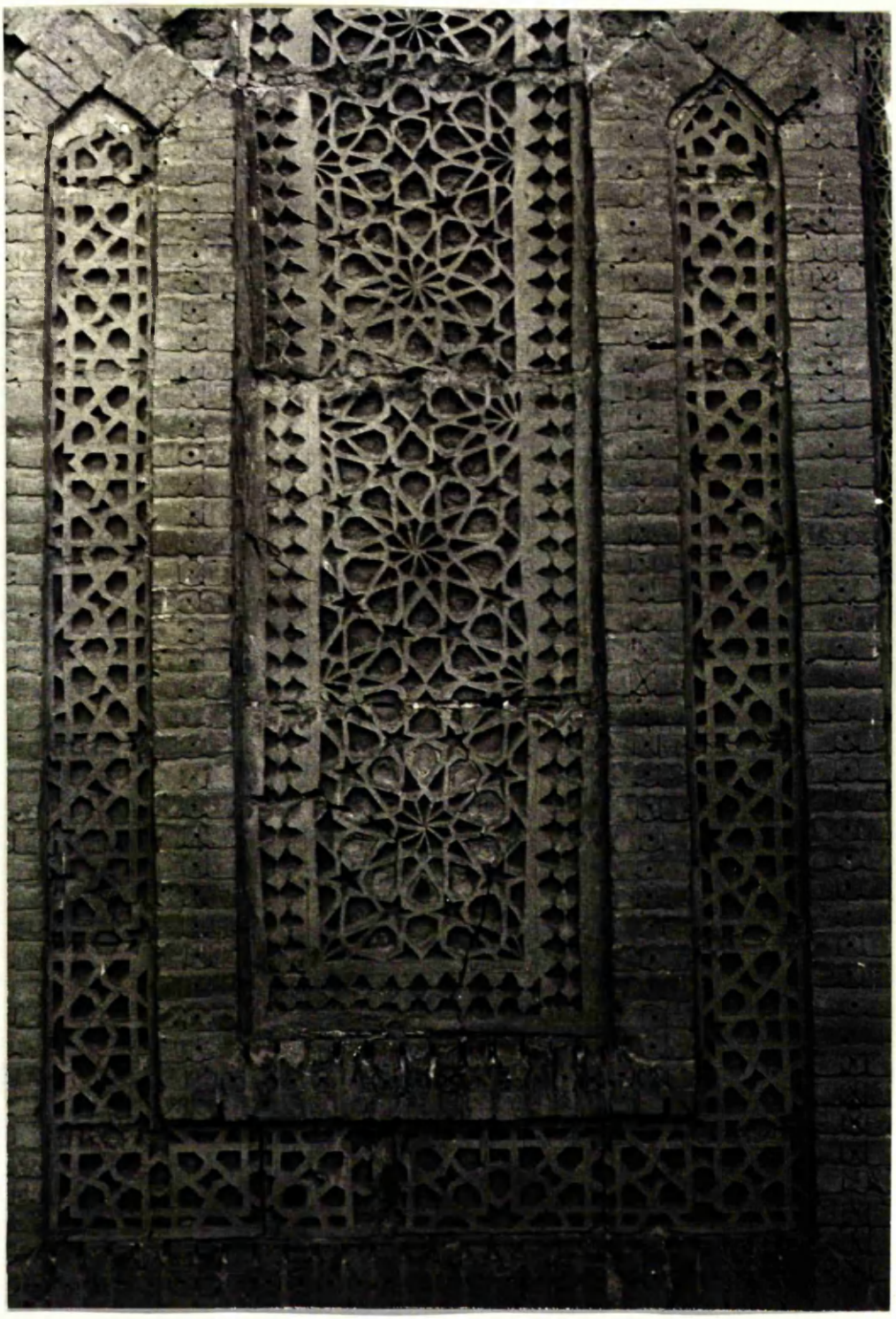


(Photo. Maricq)

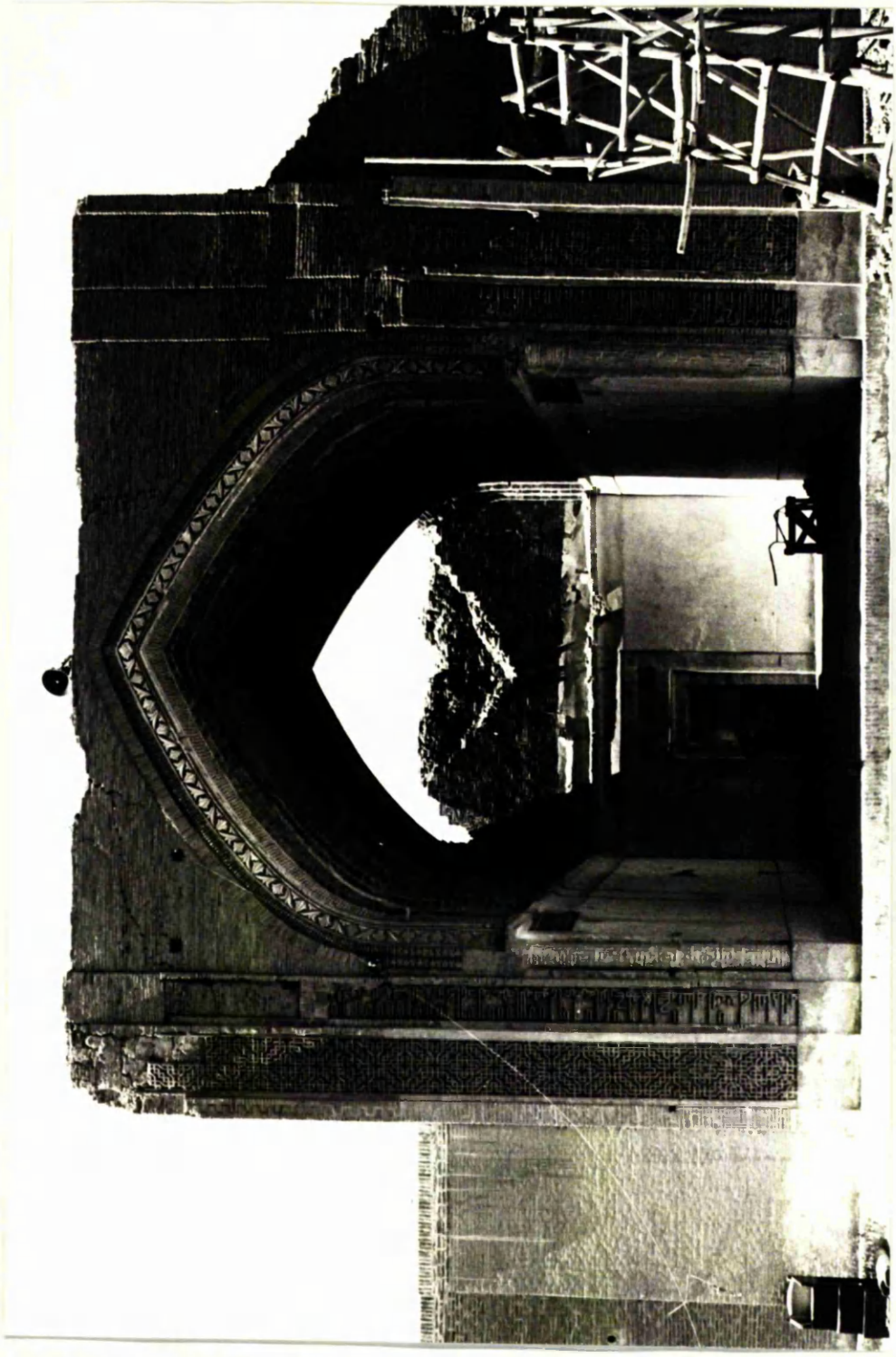
Chisht. Inscription on smaller mausoleum



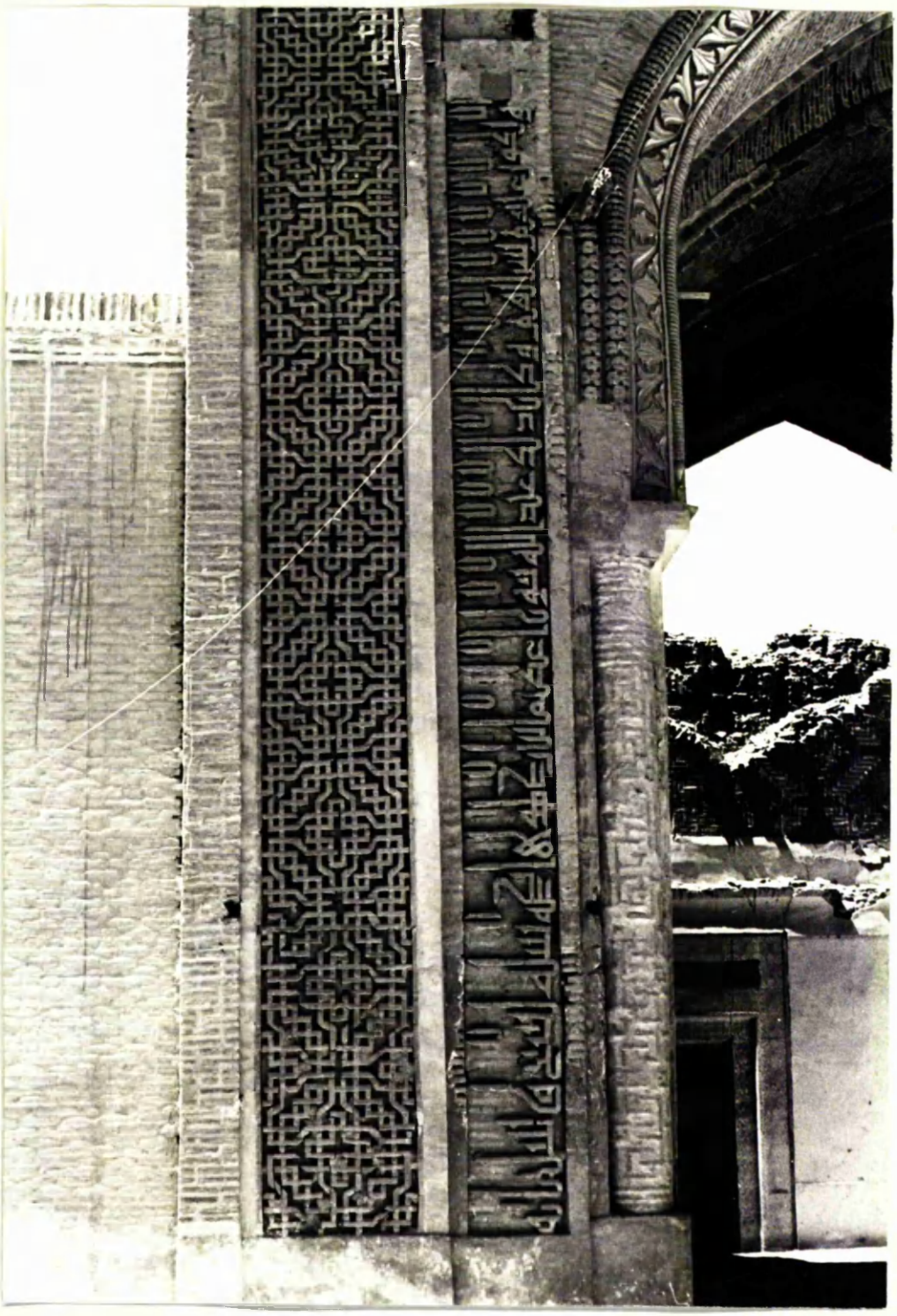
Firdaws - Masjid-i Jāmi'. Qibla īvān



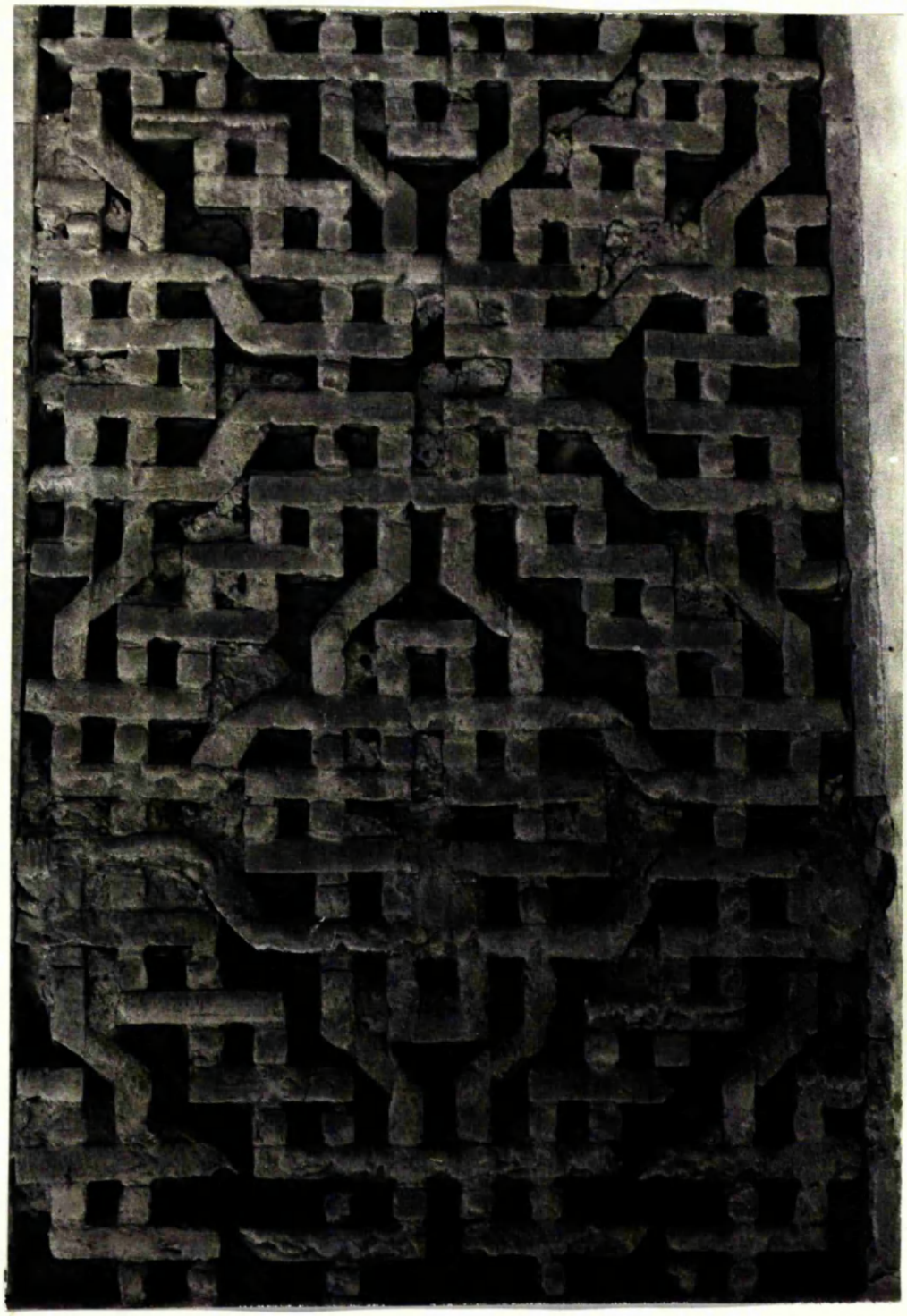
Firdaws - Masjid-i Jāmi'. Qibla īvān - detail



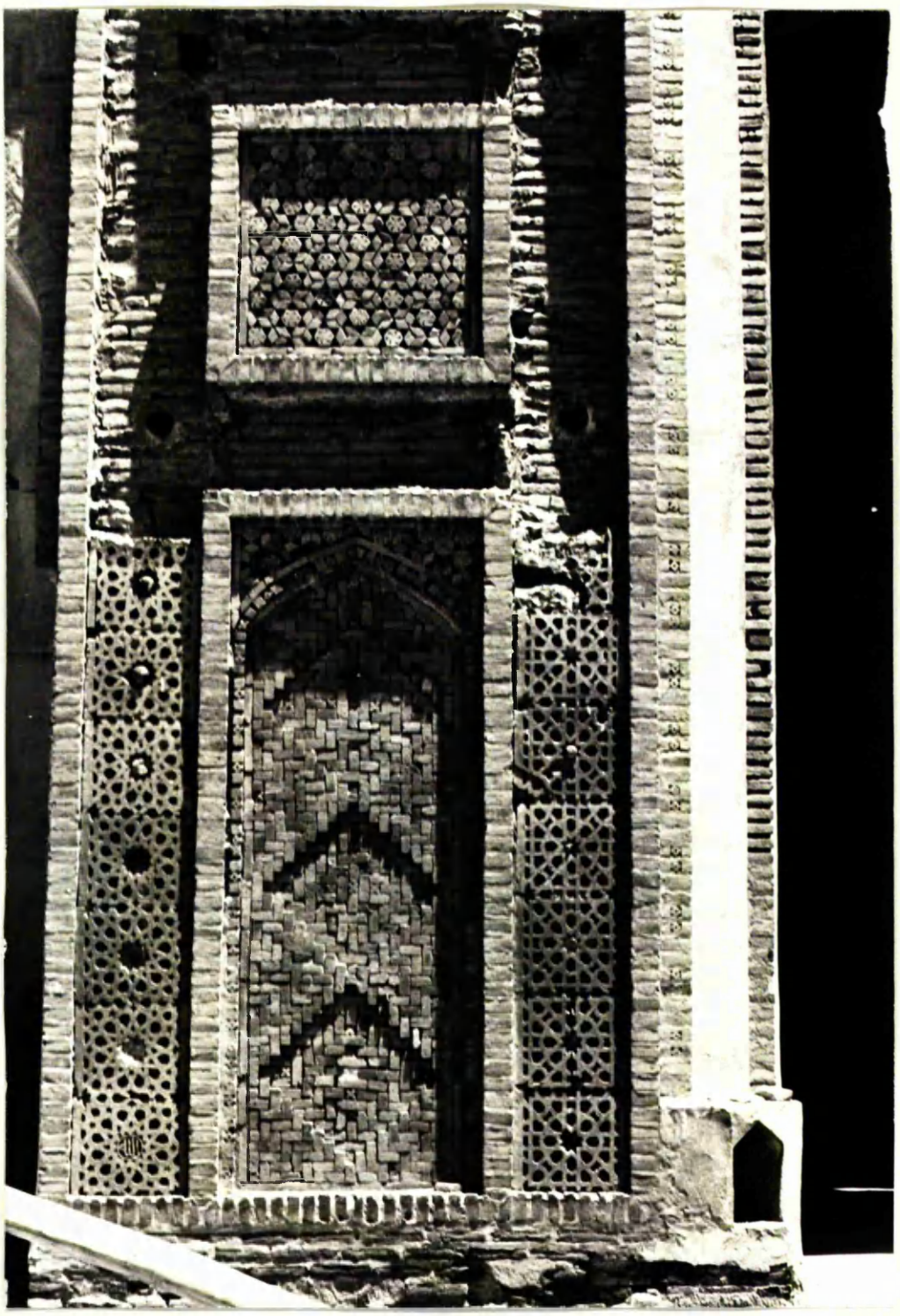
Gunābād - Masjid-i Jāmi'. Qibla īvān



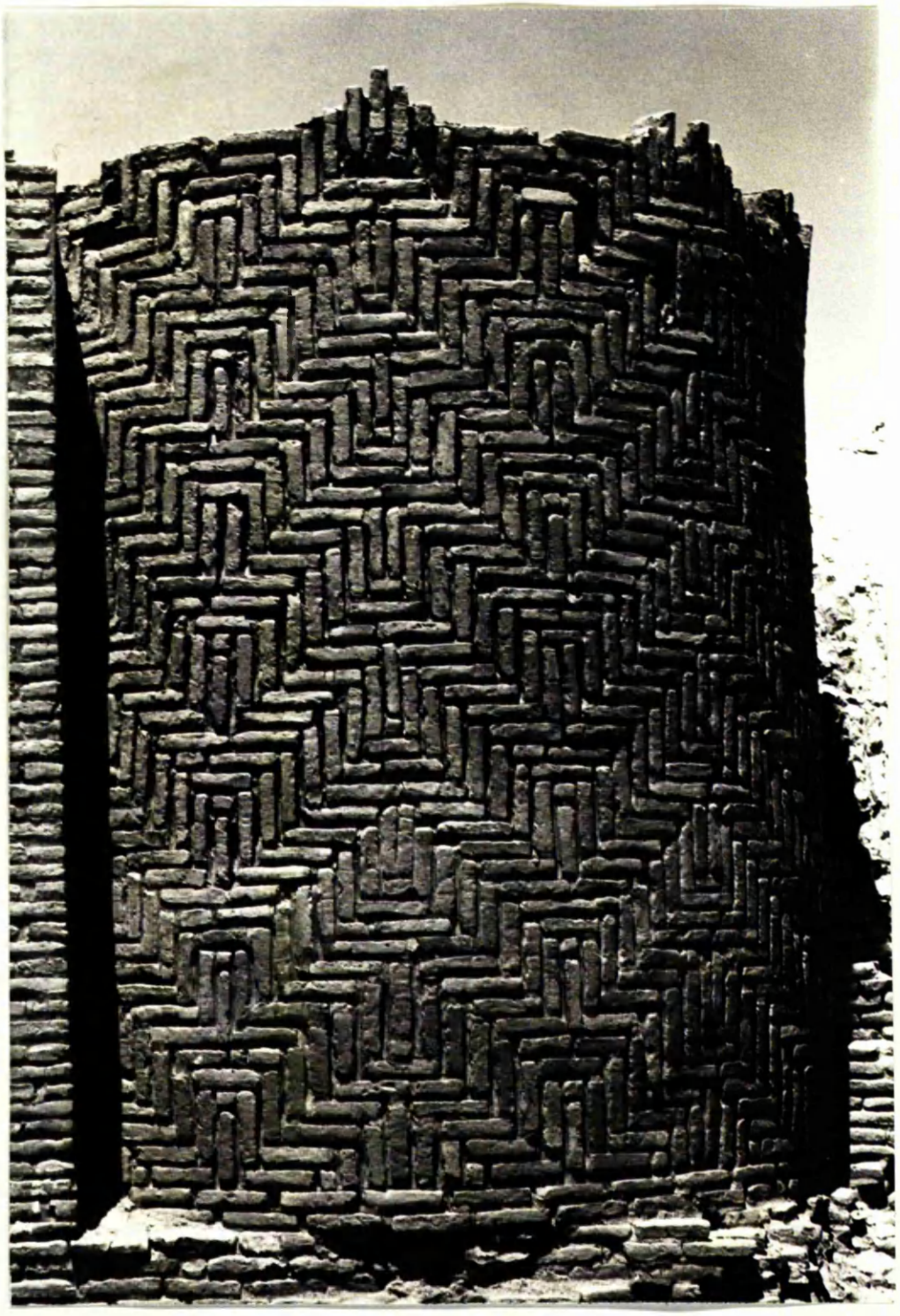
Gunābād - Masjid-i Jāmi'. Qibla īvān



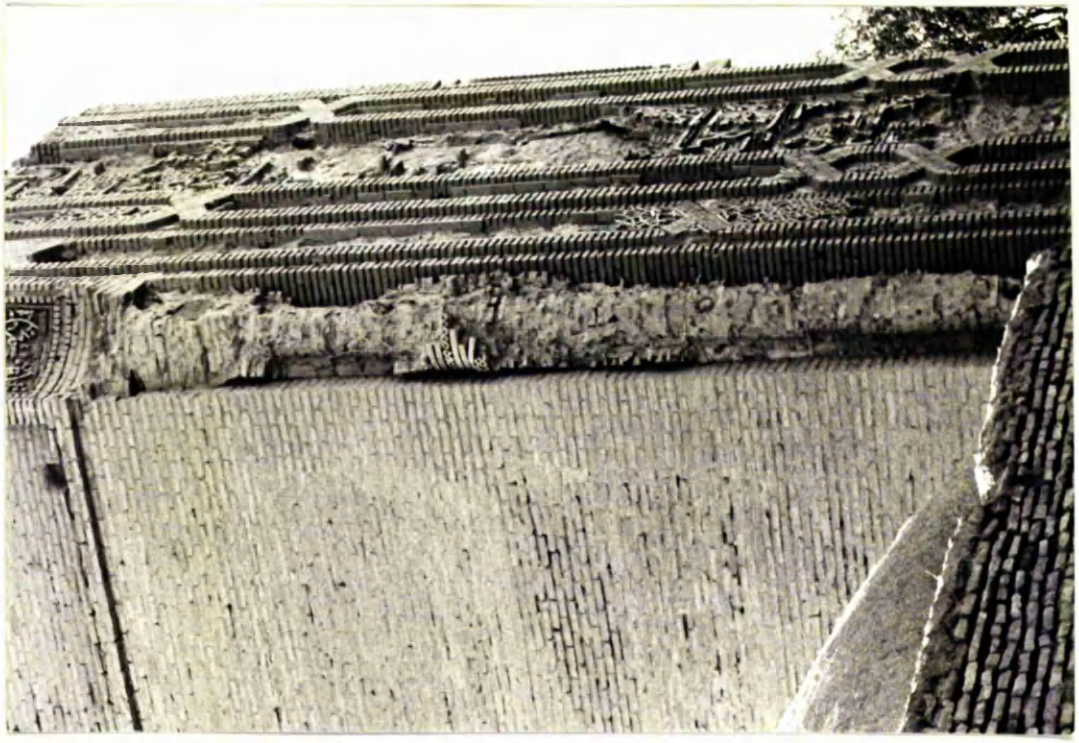
Gunābād - Masjid-i Jāmi'. Qibla īvān - detail



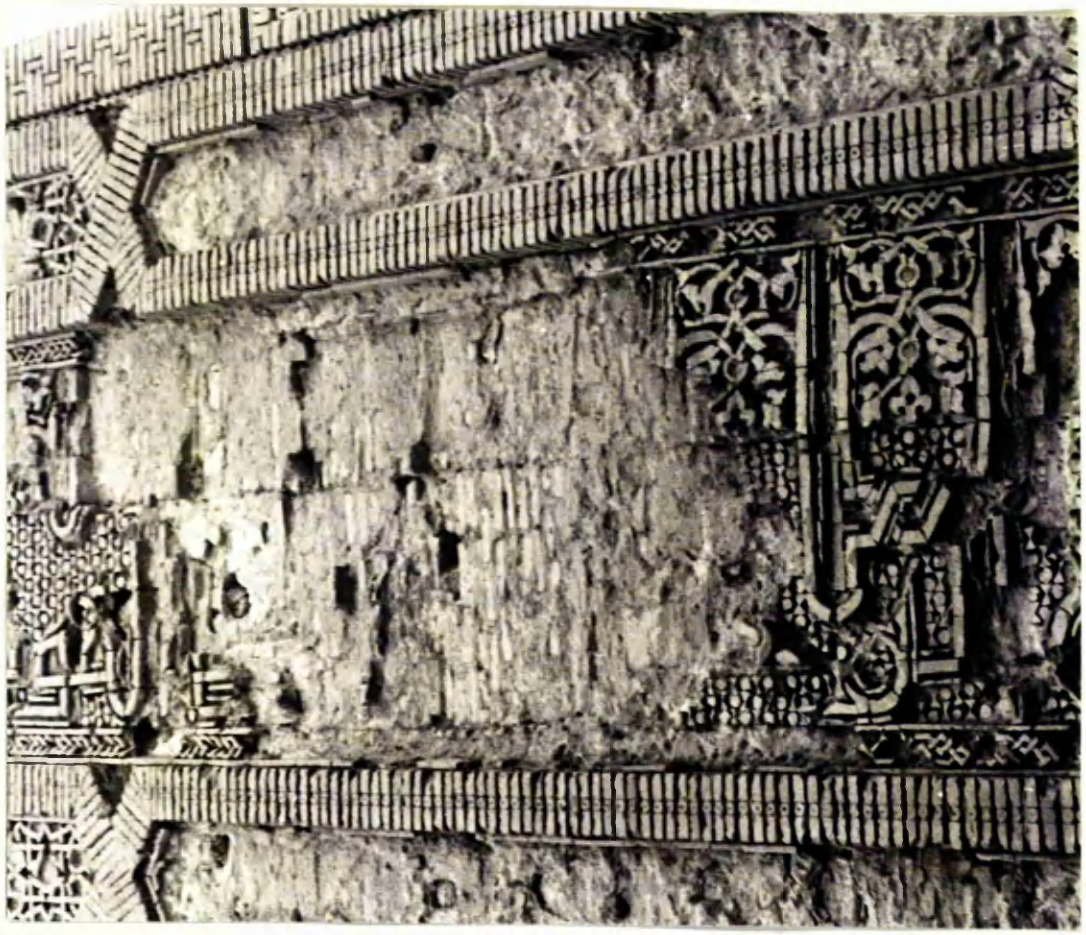
Gunābād - Masjid-i Jāmi'. North īvān



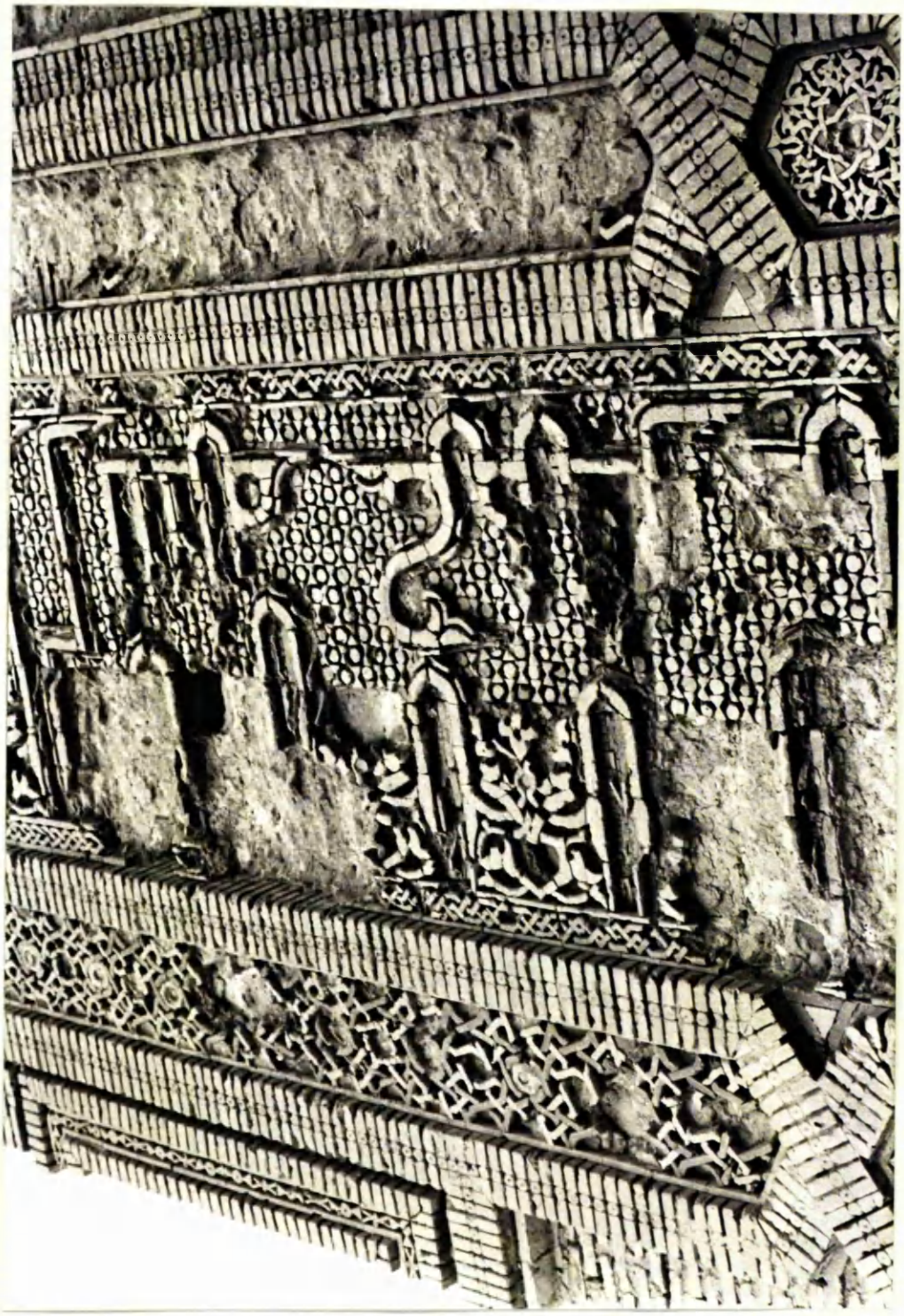
Gunābād - Masjid-i Jāmi'. Minaret



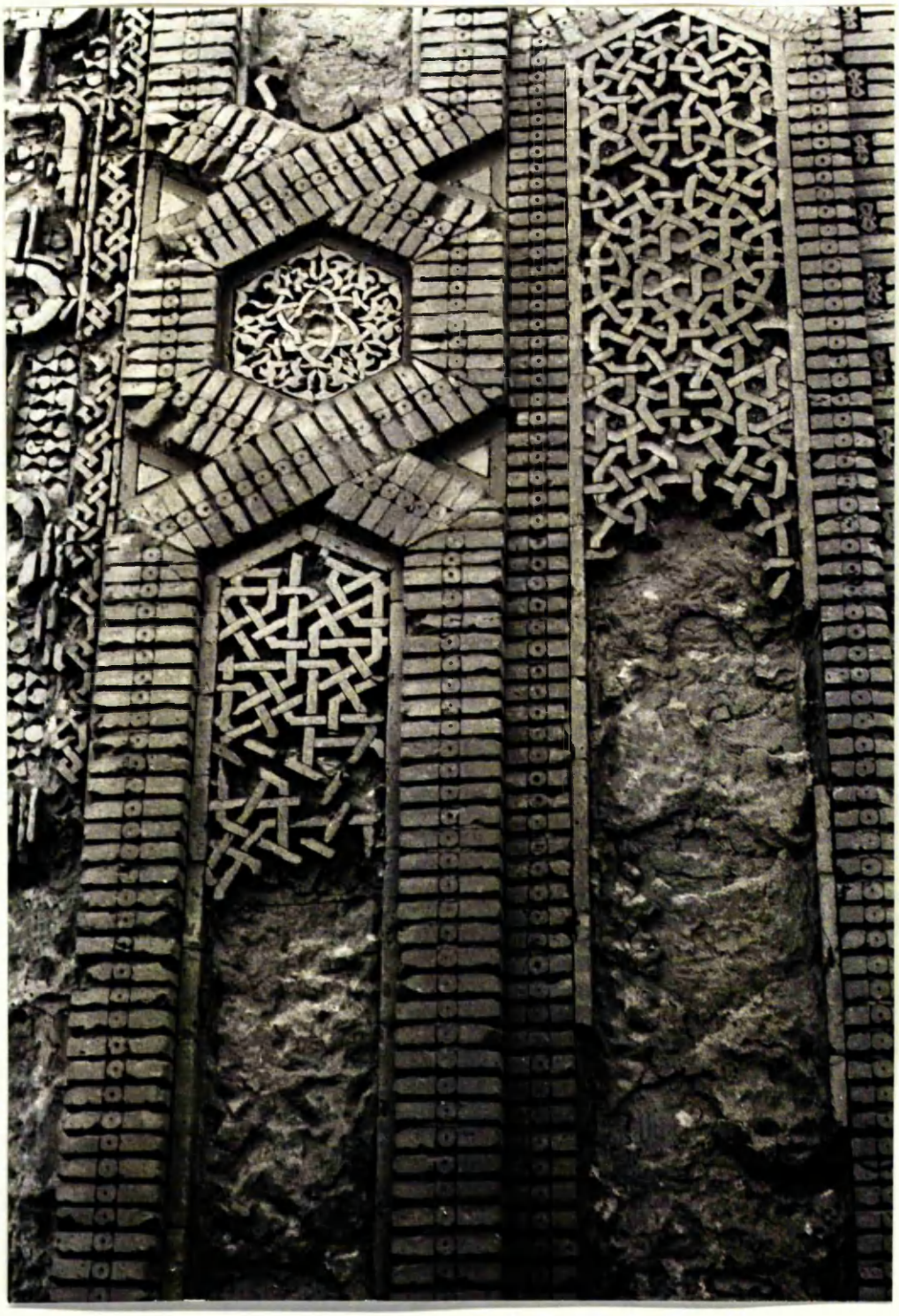
Zūzan - Masjid-i Jāmi'. Qibla īvān



Zūzan - Masjid-i Jāmi'. Qibla īvān

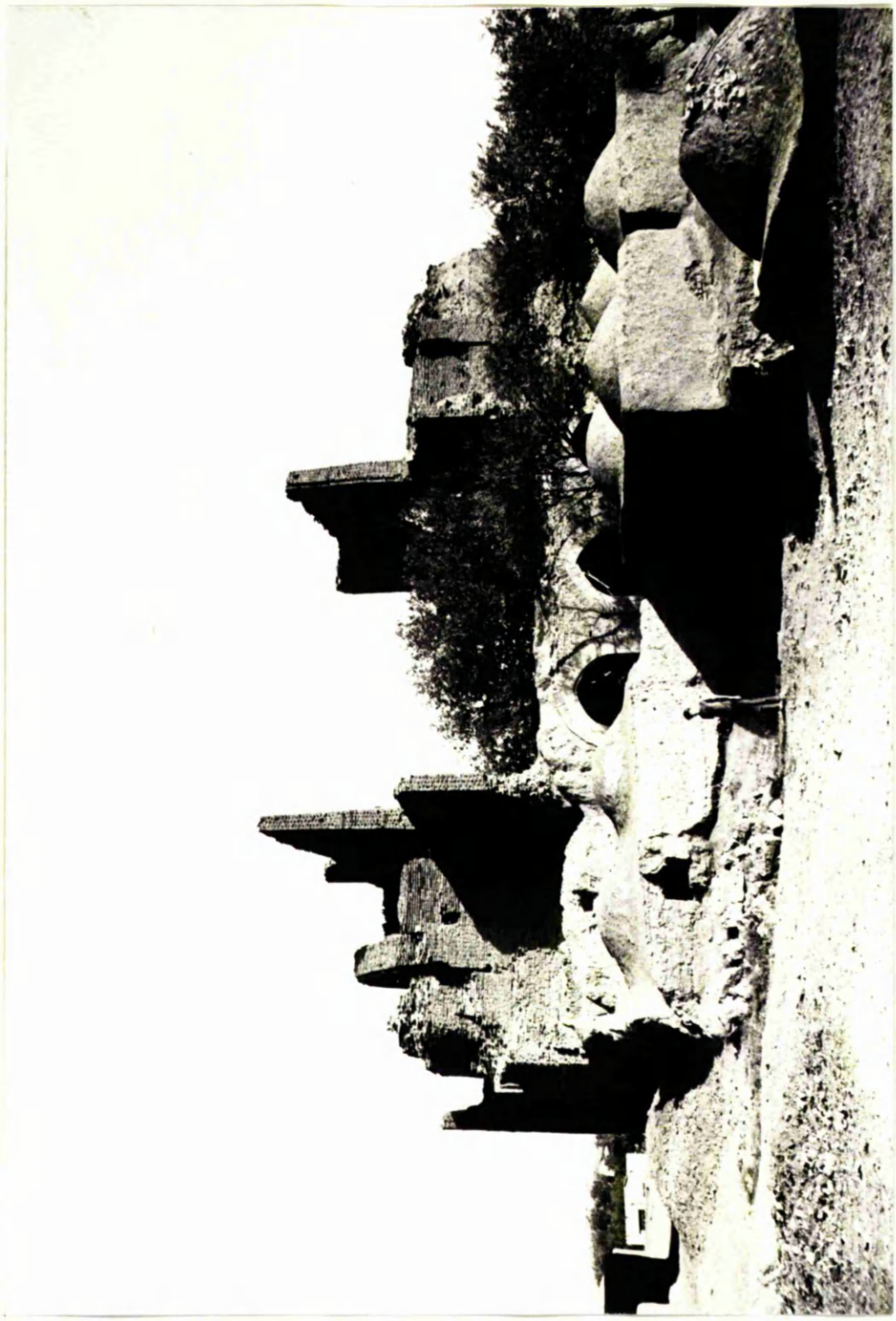


Zūzan - Masjid-i Jāmi'. Qibla īvān - inscription

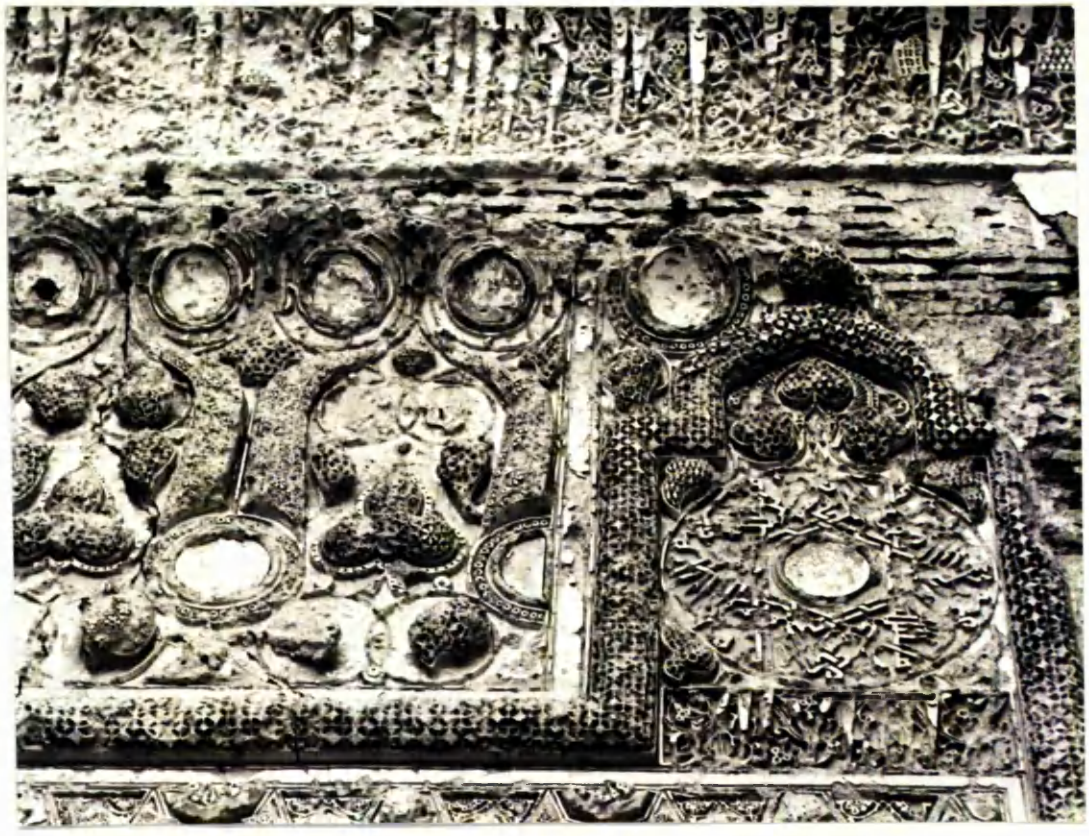


Zūzan - Masjid-i Jāmi'. Qibla īvān - detail

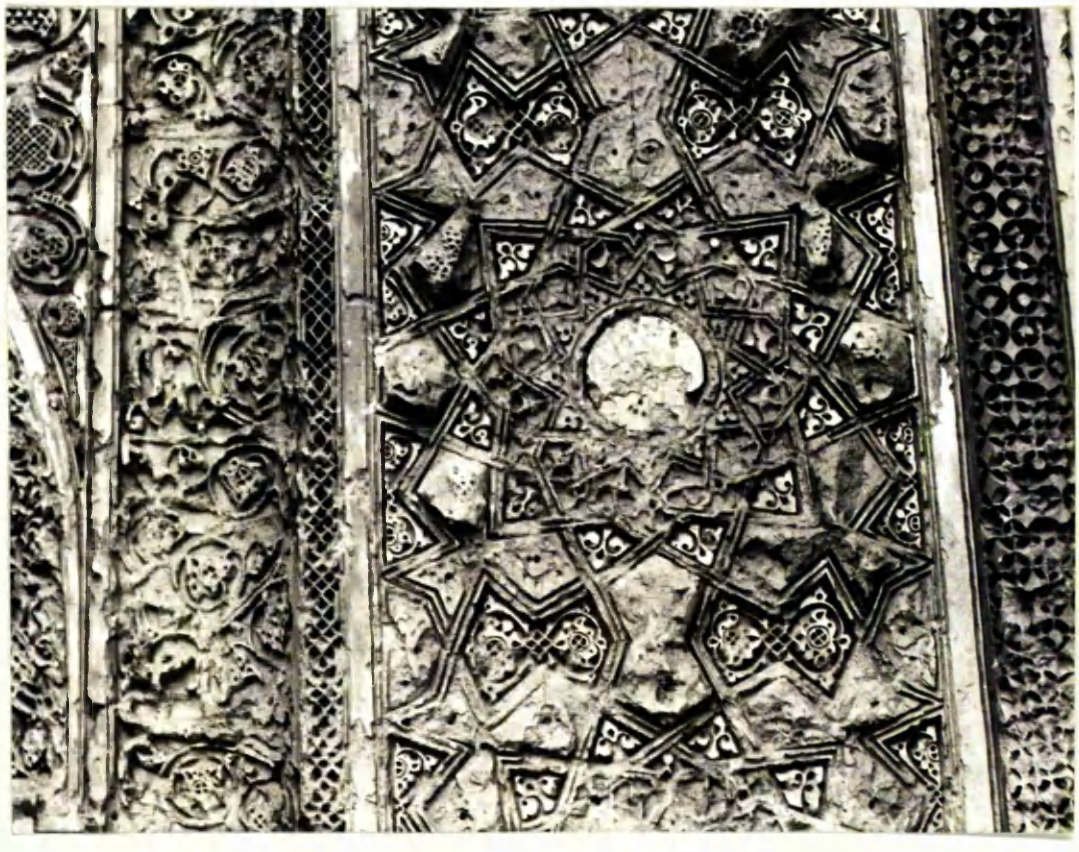
Zūzan - Masjid-i Jāmi'. Portal īvān



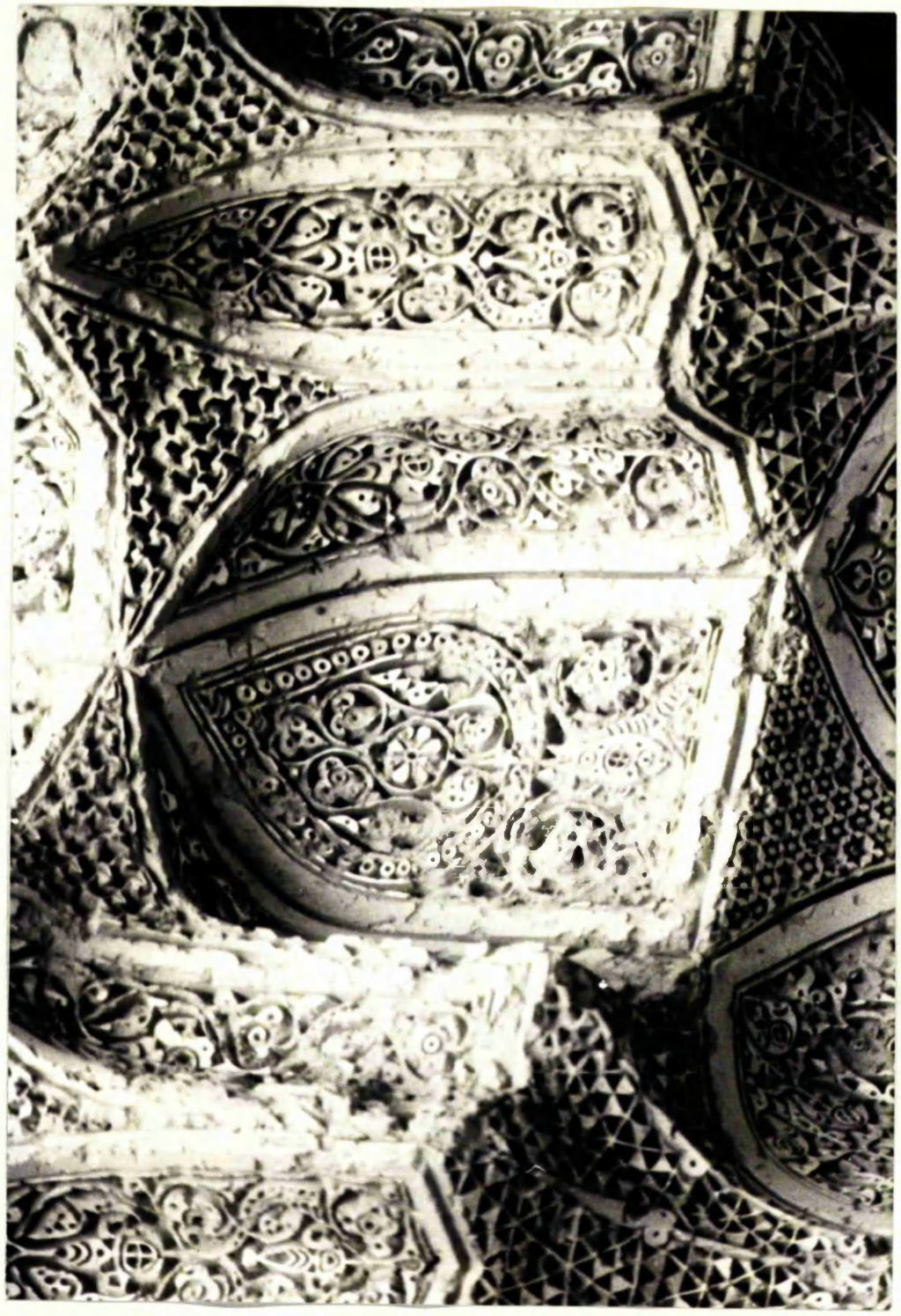
Farūmad - Masjid-i Jāmi'



Farūmad - Masjid-i Jāmi'. Miḥrāb detail

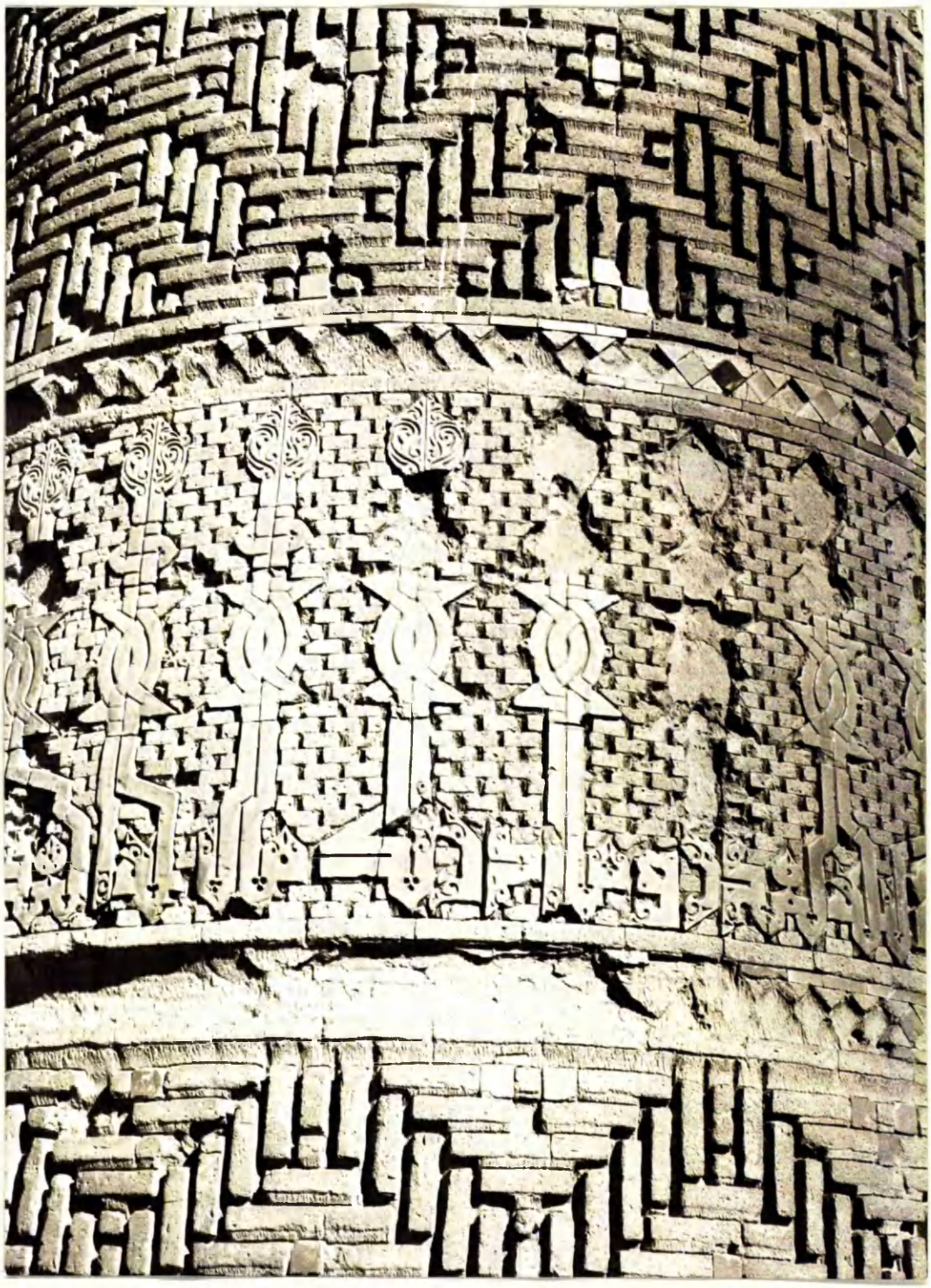


Farūmad - Masjid-i Jāmi'. Miḥrāb detail



Farūmad - Masjid-i Jāmi'. Miḥrāb detail

Nigār - Masjid-i Jāmi'



Nigar. Faience inscription detail